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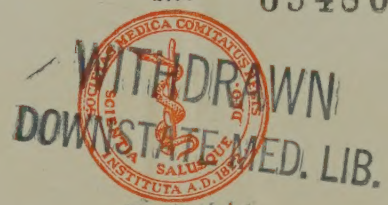


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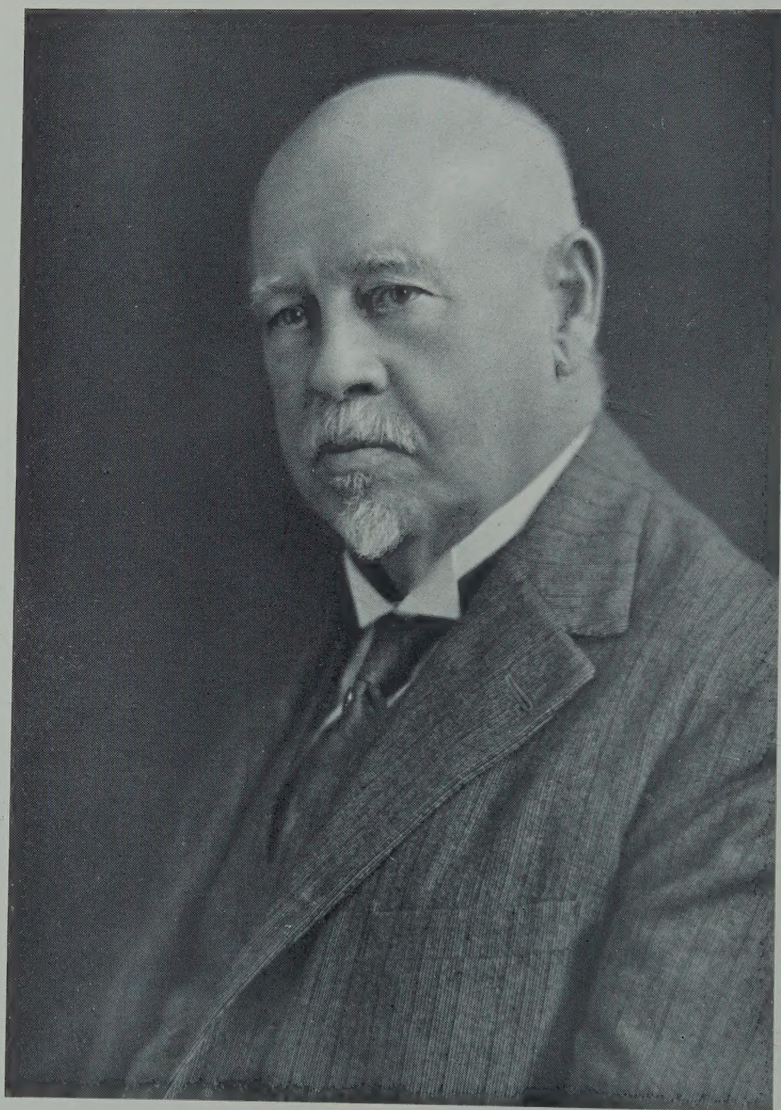
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WILLIAM H. WELCH, 1929

THE
WILLIAM H. ^{under}WELCH
MEDICAL LIBRARY

of

THE JOHNS HOPKINS UNIVERSITY

An Account of *its* Origin and Development

TOGETHER WITH A

Description of *the* Building

AND AN

Account of *the* Exercises Held *on the* Occasion

OF THE

Dedication of *the* Library

AND THE

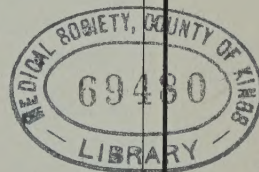
Inauguration of *the* Chair of *the* History of Medicine

AT

The Johns Hopkins University

Baltimore, Maryland

October 17 and 18, 1929



Reprinted from the

BULLETIN OF THE JOHNS HOPKINS HOSPITAL

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THE WILLIAM H. WELCH
MEDICAL LIBRARY

THE WILLIAM H. WELCH MEDICAL LIBRARY

LEWIS H. WEED

The William H. Welch Medical Library is designed to accommodate not only the libraries of the Johns Hopkins Hospital, of the School of Hygiene and Public Health and of the School of Medicine, but also the Institute of the History of Medicine, which is organized as a department of the School of Medicine. The various steps which led to the construction and endowment of this building may be of sufficient interest to justify making them a matter of record.

With the opening of the Johns Hopkins Hospital on May 7, 1889, a medical library for the use of the resident and visiting staffs was established in the administration building of the Hospital. Although in the original plans of the Hospital no definite provision for a library was included, the quarters on the first floor of the north wing of this building were at the onset quite satisfactory. The collection during the next few years grew rapidly, largely because of the interest which Dr. Henry M. Hurd, Superintendent of the Hospital, had in its enlargement and support. The original holdings were augmented by purchases, by gifts and by exchanges received through the *BULLETIN OF THE JOHNS HOPKINS HOSPITAL*. Within twenty years, the increase in the number of volumes caused the library to place a portion of its holdings in the basement of the building and to utilize an additional large room across the corridor. In spite of these efforts to provide for expansion, the quarters in the administration building became increasingly congested. The overcrowding of these rooms was such as to make effective use of the books impossible, although active service was continued. The inadequacy of the accommodations became apparent even as early as 1915; but for thirteen years thereafter the work of the library was carried on without interruption in these quarters. To the general holdings of the Hospital library the following collections were at various times added: The Morison Dermatological Collection (1897); the Howard A. Kelly Collection (1914); the Hugh H. Young Urological Collection (1917); the Henry J.

Berkeley Collection on Psychiatry (1921); and the William Osler Collection (1921). At the end of the year 1928 the library contained over 31,000 bound volumes.

The library of the School of Medicine was started by the purchase of a small number of volumes when the School was opened in 1893. This collection was initially lodged in the Physiological Building, where it remained until the construction of the New Hunterian Laboratory in 1914. At this time the library was moved to a series of rooms on the first floor of this laboratory building. The holdings were largely of books and journals pertaining to the subjects of Anatomy, Physiology, Physiological-Chemistry, and Pharmacology. The general collection of the library was strengthened markedly by addition of the Ahlfeld Teratological Collection, a gift to the University from Mr. Francis M. Jencks in 1905, and the Warrington Dispensary Collection, presented to the University by Mr. William A. Marburg in 1906. At the end of 1928 the library quarters were overcrowded and contained upwards of 14,000 volumes.

When, in 1916, the Johns Hopkins University was enabled, through the generosity of the Rockefeller Foundation, to establish the School of Hygiene and Public Health, a relatively large collection of medical journals and books was purchased as a working nucleus for a library. At first housed in the original buildings of the Johns Hopkins University, the library of the School was moved in 1925 to the new building adjacent to the Medical School. In these quarters the library was satisfactorily accommodated, although by the end of 1928 it had grown to 11,000 volumes and included the valuable collection, purchased for the School by Sir Arthur Newsholme, Resident Lecturer in Public Health Administration from 1919 to 1921.

Various factors effective during the growth of the Johns Hopkins medical institutions led to the establishment and maintenance of these three distinct libraries. The Hospital library was founded before the Medical School was opened, and it logically became the depository for clinical journals and books. The construction of the preclinical laboratories at some distance from the administration building of the Hospital was apparently one of the chief reasons for the establishment of a separate library for the preclinical sciences. Perhaps, also, the fact that the Medical School was an integral part

of the University, a separate corporation from the Johns Hopkins Hospital, prompted in the early years of the School the development of this isolated library. The library of the School of Hygiene was initially necessitated by the housing of the School in buildings far removed from the Hospital group.

These explanations of the independent establishment of the three libraries seem necessary as the idea of a central medical library, combining the collections of the Hospital and Medical School, apparently was generally accepted by the members of the Advisory Board of the Medical Faculty in the early years of the School of Medicine. Certain it is that in informal conversations the idea of centralization of the holdings was brought forth on many occasions. But in spite of the support which Dr. Welch and Dr. Osler gave to the general idea of consolidation, no progress was made. The vision of the ultimate foundation of the central library recurred in the first decade of this century, being supported by all members of the Advisory Board, and especially by Dr. Halsted, whose interest in the development of the library became very great.

The possibility of establishing such a central collection of medical books seemed to become brighter, when in 1918 Mr. George K. McGaw made his first gift to the Hospital. Shortly before this time and again in 1919, Dr. Halsted wrote to many of the alumni, urging the idea of a central library and soliciting contributions in the form of books. Although Dr. Halsted's letters gave a certain stimulus to the movement, it was not until the years 1922 to 1925 that these conceptions of a central medical library, combining three separate collections, began to assume concrete form. In this period the various Boards considered the desirability not only of the central housing of all of the periodicals and books, but also of making the library something more than a well-run technical storehouse. This broad and important conception of the library led to the development of the plan whereby the library should have intimately connected with it an institute for the serious study of the History of Medicine.

Interest in this humanistic side of Medicine had shown itself, even before the opening of the Medical School, in the establishment of the Johns Hopkins Historical Club, which met once a month for the presentation of papers on the History of Medicine. The Historical

Club flourished, particularly in the period before 1910; but with the increasing complexity of medical problems and with the more recent development of the institution along special lines, the meetings of the club became infrequent and less well attended. But while present in the minds of most members of the Medical Faculty as a desirable adjunct to medical education, the general conception of an institute of medical history had never attained definite character until the proposal for the medical library assumed final form in 1925.

In October of that year, President Goodnow presented to Mr. Abraham Flexner of the General Education Board, New York City, a detailed proposal for the establishment of a medical library at the Johns Hopkins University, which should combine the three existing libraries. The statement first developed a general thesis of the need for a library in any educational community and emphasized the fact that in Medicine this need is as great as in any other branches of learning. In this appeal it was argued that excellence in the collection of books and the maximum of accessibility do not alone compose the library, for in it there should be created an atmosphere of real scholarship, based upon the bibliography of the present in its logical relationship to past intellectual achievements.

Furthermore, President Goodnow pointed out that the Faculty of the School of Medicine had for many years appreciated the great opportunity existing in the field of medical bibliography—an opportunity to create in students and young teachers a cultural background of greatest service in making them familiar with the humanistic side of medicine. The Medical Faculty had realized that the best way of attaining this end lay in the establishment of a central library building, which should house also an Institute of the History of Medicine.

As a result of the proposal submitted by President Goodnow, the General Education Board at its meeting in February, 1926, appropriated to the Johns Hopkins University the sum of \$200,000, to serve as endowment for the Professorship of the History of Medicine. On November 1, 1926, Dr. Welch resigned as Director of the School of Hygiene and Public Health, to assume at once the newly created chair. This appointment represented the first step in the inauguration of the activities of the Institute of the History of Medicine.

Furthermore, in the same month of November, 1926, the General

Education Board appropriated to the Johns Hopkins University the sum of \$1,000,000 towards \$1,500,000 needed for the purchase of land, the construction and endowment of a central medical library. Subsequently, at a meeting in February, 1927, the conditions of this appropriation were altered by the General Education Board so that the sum of \$750,000 was made immediately available for the purchase of land and for construction and equipment of a central medical library. In addition to this immediate grant, the General Education Board agreed to pay interest upon the sum of \$250,000, provided the Johns Hopkins University should raise \$25,000 a year for the maintenance of the new library. In the event that the Johns Hopkins University should capitalize its annual quota of \$25,000, the General Education Board agreed to give to the University this sum of \$250,000, provided that \$500,000 for the endowment of the library should be raised by the Johns Hopkins University before expiration of five years after completion of the building.

In May, 1928, the University received from an anonymous donor a gift of \$500,000, thus enabling it to meet the conditions attached to the grant of the General Education Board and providing a total endowment of \$750,000, for maintenance of the library. In addition, the Trustees of the Johns Hopkins Hospital voted to continue their annual appropriations for library purposes and to turn this annual sum over to the central medical library for maintenance. Similar action was taken by the Trustees of the Johns Hopkins University in regard to the annual appropriations for library purposes made in the School of Hygiene and Public Health and in the School of Medicine. These annual appropriations, amounting to \$21,700, taken with the interest on the endowment of \$750,000, provide the central medical library with an annual income approximating \$60,000.

Throughout the extended period of negotiations it was generally understood that the building should bear Dr. Welch's name, and as soon as the financial support of the project was assured, the Trustees of the University voted unanimously to designate the building the "William H. Welch Medical Library."

Long before completion of these financial arrangements for the central medical library, plans for the building were being actively worked upon by a Faculty Committee and by the executive architect,

Mr. Edward L. Tilton of New York City, who had been selected by the Trustees of the University and Hospital. During the year 1926, Mr. Tilton developed his preliminary studies of the structure, and in the first half of 1927 the detailed plans and specifications were brought to final form in his office. Meanwhile, in order to harmonize the design of the library with future building projects, it was decided to employ the advisory architects of the University—Mr. Grosvenor Atterbury and Mr. Charles Platt—in a consultative capacity.

It was originally thought most advantageous to place the library building upon Wolfe Street opposite the main axis of the Hospital grounds. But owing to certain difficulties, this plan was abandoned and the building was located upon the Monument Street side of the Medical School lot. At the same time, preliminary plans for the reconstruction of the Medical School laboratories in a U-shaped building on the same lot were approved. In this general plan for future development, the library building will stand in the open part of the "U", so that ultimately a proper setting for the building will be achieved.

Mr. Tilton's plans and specifications for the building were submitted to a selected list of contractors in the fall of 1927, and in November the contract for the construction of the building was let to the lowest bidder, the Consolidated Engineering Company, a Delaware Corporation resident in Baltimore. Ground was broken on November 29, 1927, and on March 12, 1928, the cornerstone of the building was laid without ceremony but in the presence of a number of interested persons. In the cornerstone there were deposited a brief statement regarding the development of the project, copies of all of the official correspondence relating to the gifts made for this purpose, the complete publications of Dr. Welch, issues of the day's Baltimore Sun and Evening Sun, and other items of possible future interest.

The construction of the building occupied slightly more than a year, but on December 1, 1928, the Assistant Librarian and his staff were able to move into the building, though the removal of the books from the three constituent libraries was not undertaken until early in January, 1929. The cost of the building and equipment was \$625,000, being exactly the sum named in the proposal.

During the process of construction of the building, the Advisory

Board of the Medical Faculty, the Advisory Board of the School of Hygiene and Public Health, and the Medical Board of the Johns Hopkins Hospital agreed upon a plan of management of the library. Under this plan, which was approved by the Boards of Trustees, two representatives from each of the three boards were to constitute a committee, with the Professor of the History of Medicine as Chairman and the Medical Librarian as Secretary. During the academic year 1927-28, this committee was selected by the three boards, the Medical Board of the Hospital designating Dr. Warfield T. Longcope and Dr. J. Whitridge Williams; the Advisory Board of the Faculty of the School of Hygiene, Dr. Elmer V. McCollum and Dr. William W. Ford; and the Advisory Board of the Medical Faculty, Dr. William G. MacCallum and Dr. E. Kennerly Marshall. On completion of the building this committee took active charge of its administration.

WILLIAM H. WELCH MEDICAL LIBRARY

EDWARD L. TILTON, F.A.I.A.

The William H. Welch Medical Library occupies a prominent site in Baltimore on Monument Street between Washington and Wolfe Streets, an integer of the Johns Hopkins Hospital group. It might fittingly bear the inscription which Diodorus Siculus states was over the doorway of the Library at Thebes,—“Dispensary of the Soul” (Psychesiatreion).

The Trustees decided to dedicate the Library to Dr. William H. Welch whose inspiring personality has been associated with the Johns Hopkins Hospital since 1884, successively as Professor of Pathology; first Dean of the Medical Faculty; first Director of the School of Hygiene and Public Health, and Professor of the History of Medicine. In addition he will be remembered as an altruistic citizen, who has devoted his life, alone and in unselfish collaboration with others, (notably Dr. Osler) in fighting unsanitary conditions, and promulgating the laws of hygiene. As C. Hymenaeus of Augustus' time was both physician and librarian, so Dr. Welch, as a doctor of medicine and a bibliophile, has collated valuable incunabula and later works, germane to medicine.

In the second story of the new building a suite of rooms (office, secretary's room, laboratory and lecture hall) has been provided wherein Dr. Welch may prosecute his work. The lecture hall is equipped with stereopticon and aluminum curtain against which to project the pictures. Behind the reading desk on the platform are a blackboard and swinging frames to support charts. The room may be darkened by opaque window shades.

The opposite end of the building contains two large vaults and several study or seminar rooms; one of which will be a memorial to Dr. Rupert Norton; another will contain Dr. Henry Barton Jacob's remarkable collection of Jenneriana, the works of Laennec and others, besides valuable prints and medals.

The exhibition gallery on this floor will hold cases for displaying works of peculiar interest; early copies of Harvey, Vesalius and other protagonists in medical science.

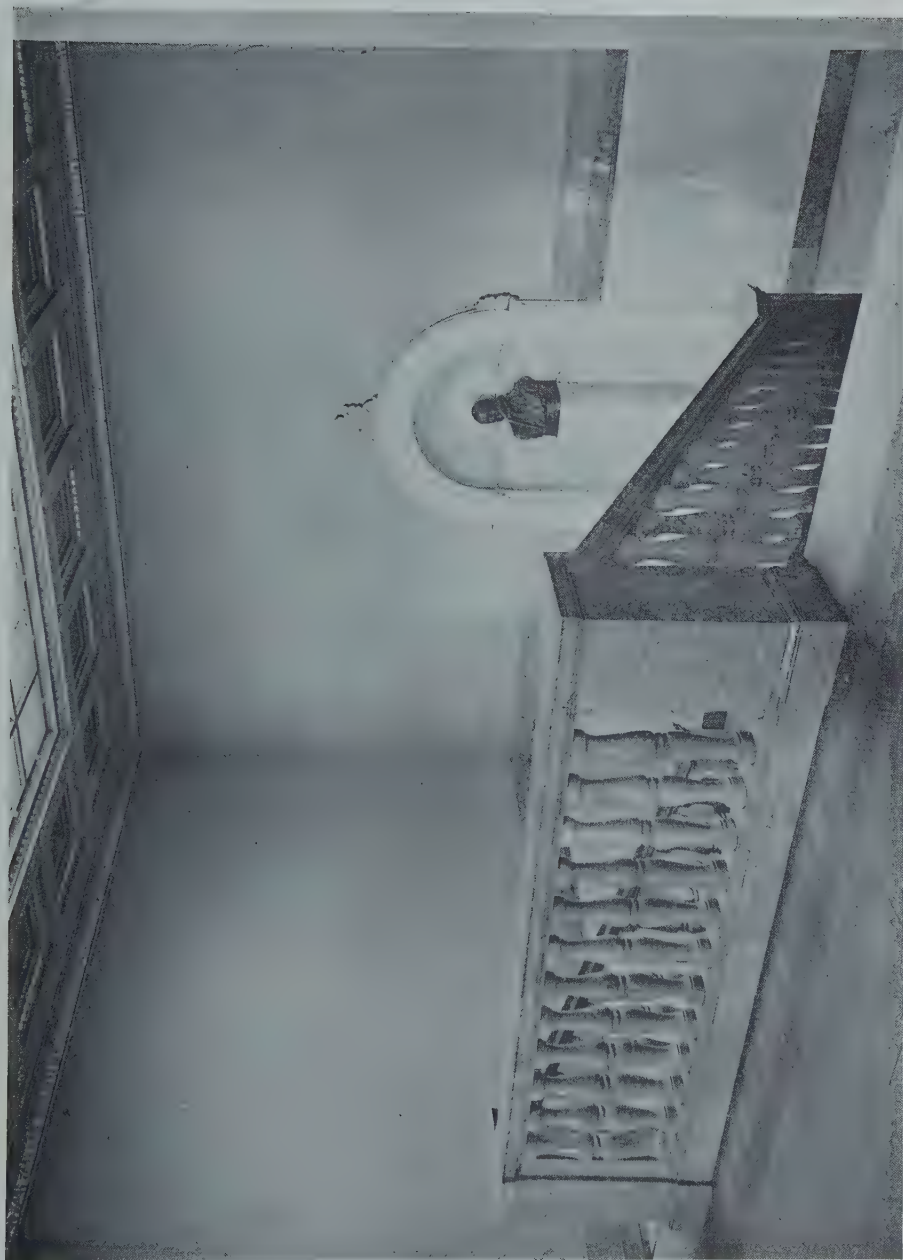


WELCH MEDICAL LIBRARY

Immediately below this hall, on the main floor, is a large marble-tiled lobby containing an ancient statuette of Aesculapius (the gift of Mrs. Rupert Norton) supported by a slab of *Rouge d'Automne* marble from south-western France. Large leather-covered chairs invite the weary. The lobby is reached from the lower entrance floor by a monumental marble stairway wainscoted with Botticino and Sainte Geneviève marbles; the former from Italy, the latter, impressed with fossiliferous shell markings, from Missouri. On the stair landing is a niche with a pedestal supporting Dr. Welch's bust in bronze, patinated by Mme. Lascari to harmonize with the marble. At the head of the stairs are portraits of Daniel Coit Gilman, first president of Johns Hopkins University, and of Miss Mary E. Garrett, its benefactress.

The lobby at the west end, opens into the "Great Hall" devoted to social functions, with an adjacent serving room, connected by a lift with a nether kitchen. The "Great Hall" is finished with walnut paneling and mantelpiece, oak flooring, and a large log-burning fireplace, whose facing and hearth are of Campan Griotte marble from the French Pyrenees. Heavy andirons touched with low-toned gold leaf can support the Yule log for merry occasions. The long windows are shaded with mohair curtains. The ceiling of this room and of that over the stairway are richly decorated with countersunk and moulded plaster panels painted by Salvatore Lascari in harmonious colors and pure gold leaf; in the designs are incorporated the Aesculapian serpent with wings of thought and aspiration; the shields of Johns Hopkins, City of Baltimore and others, while over the stair hall are the signs of the Zodiac. The room is lighted by chandeliers that harmonize with the ceiling; the lamps are covered with parchment shades. In addition there are several floor and table standards. Walnut tables, gray upholstered chairs and divans of varying patterns give an atmosphere of comfort. At the end of the "Great Hall," supported by a concealed steel frame-work, is Sargent's famous painting of the four doctors; Welch, Halsted, Osler and Kelly on a canvas 14 feet high by 11 feet wide. Dr. Welch's hand rests upon a volume of Petrarch's Sonnets which after various vicissitudes has come to rest in the Tudor-Stuart Club, Baltimore.

At the east end, the lobby opens into the large Reading Room where



VIEW OF STAIRCASE WITH PORTRAIT BUST OF DR. WELCH

high oak shelving lines the walls. Cork-tiled flooring in a pattern offers a resilient surface. Large dark oak tables and easy chairs invite the reader. There are no table lamps to offer uncomfortable reflections from the reader's book, but ample general illumination is provided by well distributed chandeliers. A test by Dr. Clark, of the School of Hygiene, gave the satisfactory result of 9 to 10 foot candles at table height (30 inches from the floor) and $6\frac{1}{2}$ foot candles at the lowest shelf of the book cases. At its west center are the

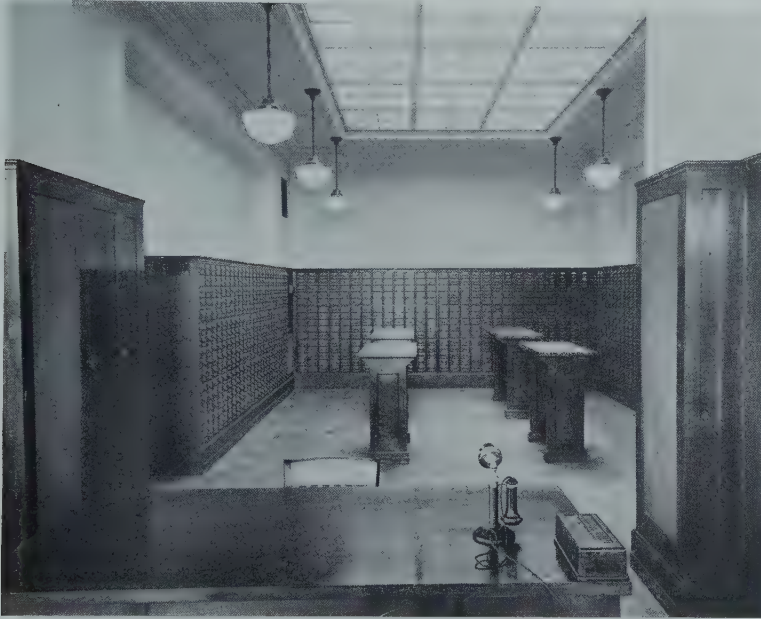


MAIN READING ROOM

catalogue cases with more than two million card capacity. Adjunct cases for a special collection are in an adjacent smaller room. A librarian's control-desk commands the reading and catalogue rooms, also the access to the metal stacks, which occupy the rear of the building, extending seven tiers in height, from the basement to the roof, with a capacity of a half-million volumes. On every stack story are small studies or carrels, 78 in all, for student's use, each containing a table, chair and book shelving.

The stack floors are of Kasota marble from Wisconsin. The stack aisles are lighted by electric overhead bulbs, six feet apart, controlled by switches at the ends of the stack tiers.

With the main book stack occupying practically all of the basement floor area, tunnels have been constructed around the four walls of the building to provide space in which to run the heating, water and waste pipes, electric cables and ventilating flues. All of this equipment is accessible for repair or extension.



CATALOGUE ROOM

The entrance story is devoted to ample-sized receiving, order, cataloguing work-rooms, librarian's offices, coat, toilet, rest rooms for both sexes with metal lockers, attractive wicker furniture in the women's room, photographic room with dark room and kitchen. This last is filled up with gas range, sink, refrigerator, dressers, and the lift before mentioned.

Steam for the heating and ventilation of the library is supplied from piping run through the underground tunnels from the central power

plant on Wolfe Street. The heating is arranged as a vacuum system with the radiators concealed in the more important rooms, and in these rooms and the book stacks it is automatically controlled by temperature regulation system.

For the ventilation of the Reading, Formal and Lecture rooms, fresh air is brought in from the outside of the building, heated and filtered. The circulation of the air in the main book stacks is accomplished by



THE GREAT HALL, WITH THE SARGENT PORTRAIT OF THE FOUR DOCTORS

fans, with filters for cleaning the air. Toilets, smoking rooms and kitchens are ventilated by fans on the roof.

Ample and modern toilet and wash rooms for men and women are located on each story, with special sinks in the Dark Room, Photo-static Room and Bindery.

For permanence, all water pipe in the building is of brass with hot water tank of copper.

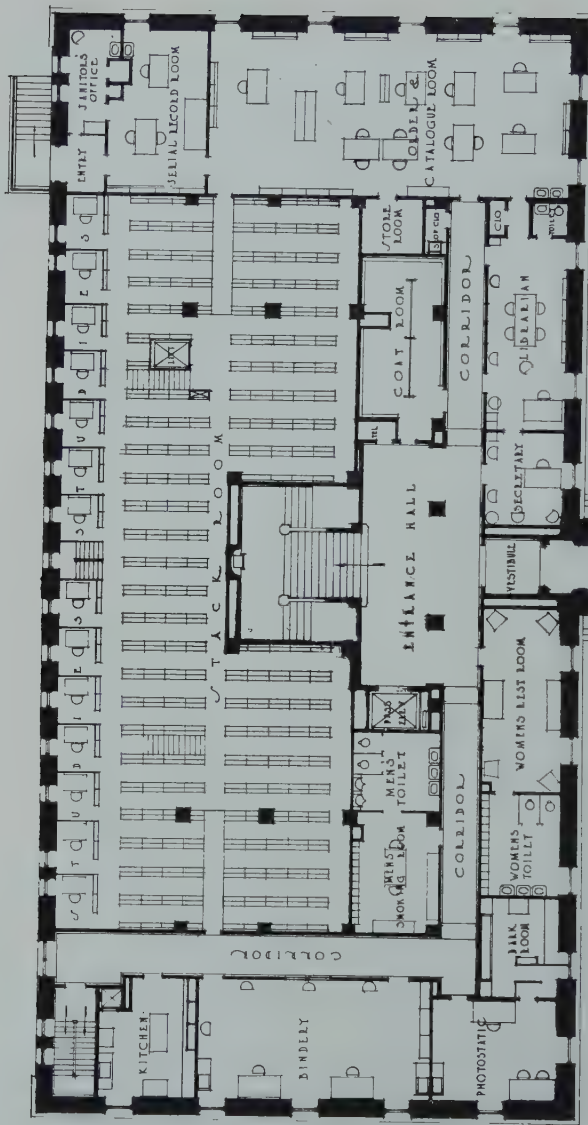
Electric current for lighting of the Library, operation of elevators, heating and ventilating systems, is supplied through cables in underground tunnels from the central power house.

Interior telephone system furnishes communication between book stack levels, catalogue and Librarian's rooms.



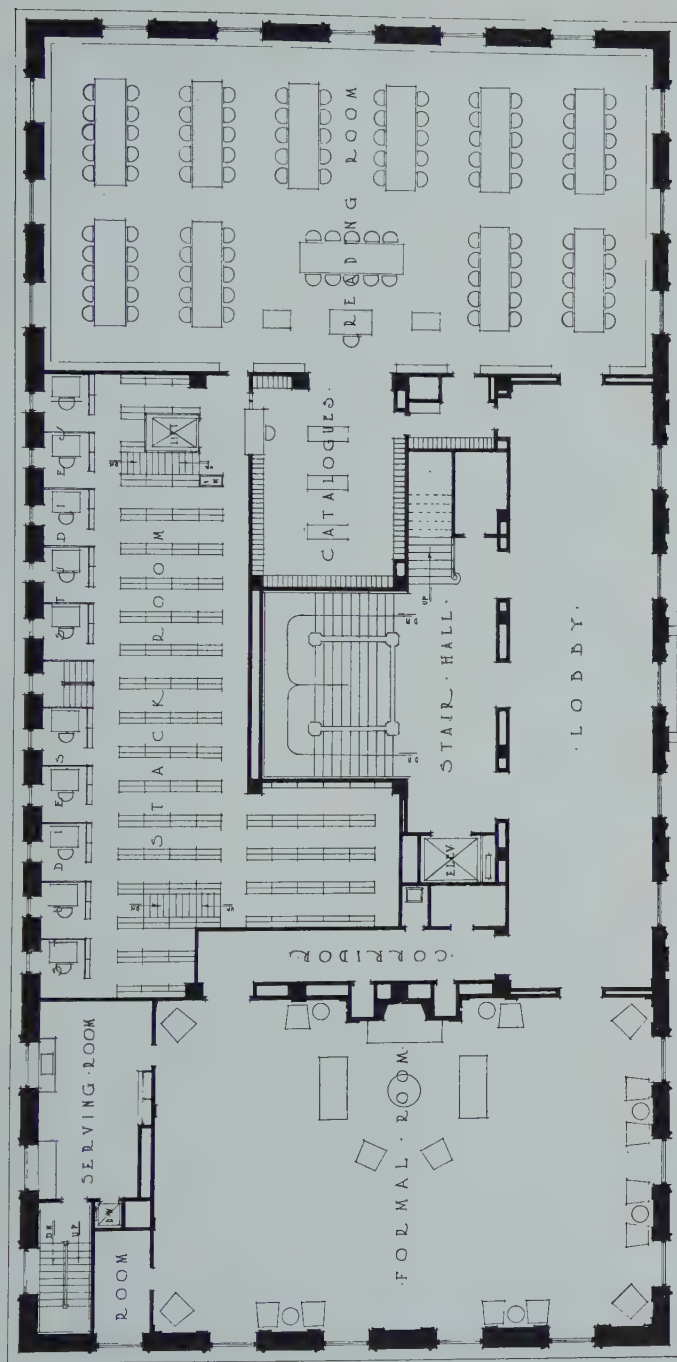
ANTIQUE STATUE OF AESCULAPIUS

The Gift of Mrs. Rupert Norton



-ENTRANCE FLOOR PLAN-

SCALE 0 4 8
1/8" = 1'-0"



MAIN FLOOR PLAN

SCALE 0 4 8 16 FEET

Daylight effect is produced in the skylights over main stairway and catalogue room by electric flood lights above the glass panels.

Automatic electric push button elevator has been provided for general public use with similar automatic book lift in the main book stack.

The main vestibule floor is of dark "non-slipping" tile; the lobbies and corridors of marble tiles and of terrazzo laid off in squares with brass separators. The toilet rooms are finished with tile floors, wainscoting and white marble partitions.

The building is designed in a modified Italian Renaissance, faced with variegated Indiana limestone.

The stone cornice of the building is enriched with modillions and the frieze with ornaments similar to those of the Farnese Palace. The building sets back twenty-seven feet from Monument Street, and the sloping sidewalk is warped up to a level at the base of the broad gray granite entrance steps and wide cheek copings. The pronounced incline of the property from Washington to Wolfe Streets necessitated terracing at the west end of the building, which has been planted with shrubs. A high retaining wall restrains the terrace at its northerly end, and preserves the level of the old entrance path to the rear from Wolfe Street.

New wrought iron posts in harmony with the old fence have been introduced at the main entrance on Monument Street and against them the fence abuts at the upper and lower levels. From these posts new sections of fence curve inward to the entrance steps.

The entrance doors are of heavy oak protected by bronze grille. The building is fireproof throughout, with steel window frames and sash. The bronze electric light standards are at the sides of the entrance.

An effort was made successfully to furnish ample natural light by day, and well distributed artificial light by night, but the greatest light is to emanate from the devoted Faculty, who are like the sons of Aesculapius, Machaon the Homeric surgeon, who drew the arrow from Menelaus' wound, cleansed and applied soothing balsams which Chiron had given to his father and Machaon's brother, Podalirios, the physician, who had received from his father the gift of "recognizing what was not visible to the eye."



THE DEDICATORY EXERCISES

The programme of the dedication of the William H. Welch Medical Library and the Department of the History of Medicine was as follows:

THURSDAY, OCTOBER 17, 1929

11 a.m. Dedication of the William H. Welch Medical Library.
Great Hall.

President JOSEPH S. AMES.

Remarks, with presentation of the Key of the Library by
the Architect, Mr. E. L. TILTON.

Acceptance by Mr. BLANCHARD RANDALL in behalf of
the Trustees of the University.

Address by Dr. HARVEY CUSHING, Professor of Surgery,
Harvard University.

1 p.m. Luncheon. Great Hall.

3 p.m. Conference on Medical Libraries and Bibliography.
Auditorium, School of Hygiene and Public Health,
615 North Wolfe Street.

4 p.m. Tea. Great Hall.

9-11 p.m. Reception. Great Hall.

Between the formal exercises the Library will be open for inspection
on Thursday and Friday.

At five o'clock, a bas-relief designed by Mr. Paul Manship in
memory of Dr. John Howland will be unveiled in the Harriet Lane
Home of the Johns Hopkins Hospital.

FRIDAY, OCTOBER 18, 1929

- 11 a.m. Inauguration of the Department of the History of Medicine. Auditorium, School of Hygiene and Public Health, 615 North Wolfe Street.

Professor WILLIAM H. WELCH.

Address by Mr. ABRAHAM FLEXNER.

Address (in German) by Professor KARL SUDHOFF, Director-Emeritus of the Institute of the History of Medicine, University of Leipzig.

- 1 p.m. Luncheon. Great Hall, Welch Medical Library.
3 p.m. Conference on the History of Medicine. Auditorium, School of Hygiene and Public Health.
4 p.m. Tea. Great Hall.
5 p.m. Exhibition of Harvey Tercentenary Film. Auditorium, School of Hygiene and Public Health.

On Saturday, October 19, a Lecture on the Herter Foundation will be given at 12 o'clock in the Auditorium of the School of Hygiene and Public Health, by Professor OTTO WARBURG, Kaiser Wilhelm Institut, Berlin-Dahlem, Germany, on

The enzyme problem and biological oxidations.

DEDICATION OF THE WILLIAM H. WELCH MEDICAL LIBRARY

PRESIDENT JOSEPH S. AMES

This day marks the formal opening of the William H. Welch Medical Library, and friends of Dr. Welch and of the University have come from far and near to do him honor and to testify to the great service this library will be to the University and the Hospital.

We owe this building to the generosity of the General Education Board, and its endowment to the same foundation, and to the interest of one man, who still wishes to remain anonymous. The collections of books in the building are made up of those which were formerly of the Schools of Medicine and of Hygiene and Public Health and in the Johns Hopkins Hospital. These are primarily books and periodicals for the use of students, research workers, faculty and Hospital Staff; but another collection is growing rapidly of books to be used in connection with the Institute for the History of Medicine about which we shall hear tomorrow.

The importance of a great library in the daily life of a University does not require emphasis. Equally important is the building which contains it, and much more important is the spirit of the Librarian and his staff. Their primary duty is to see that the books are used and that every possible assistance is given the man who is seeking information.

The University is to be congratulated upon having this beautiful and admirably arranged building, and I hope that all of you who are here this morning will notice certain features of the building and its equipment which are designed to make it more than a mere house for books. It has been our sincere endeavor to give the Library a human aspect, and to produce the impression that it itself is a living thing and an integral part of the life of the University. You will have noticed on the landing place of the main staircase two portraits—one of President Gilman, whose far-sighted genius outlined the plans of the original School of Medicine, the other of Miss Mary Garrett, through whose generosity it was possible to open the School much

earlier than otherwise would have been the case. You see in front of you in this room the great Sargent portrait of the Four Doctors, the real founders of the School. You will see, in other parts of the building, the way in which we have attempted to produce the effect I have referred to.

I cannot speak of this building without paying tribute to one man to whose efforts more than to those of anyone else, the completion of the building is due. He is a man who has followed the work step by step, who has supervised all the arrangements by which the building was made ready for this formal day of opening. Without him I doubt if we would yet have persuaded Dr. Welch to move into his new rooms. This man is Dr. Lewis Weed, and on the part of the University I beg to extend to him our most sincere thanks.

In the end, however, what the University is most grateful for, over and above the building itself and its collections, is the fact that we have, upon our Faculty, Dr. Welch, who will continue to show us how a Library should be used. This is not the time nor the place for me to express my own appreciation of Dr. Welch's value and services, nor to attempt to put in words what the University owes to him. I hope that occasion will be found very shortly. It cannot often happen that a man sees in his lifetime so many of his projects realized as in the case of Dr. Welch, and, although I am sure he still has many unfulfilled desires in his fertile brain, I do wish to congratulate him most sincerely upon seeing formally opened today this striking monument to the affection and honor felt towards him by all who know him, even by all the world of men of science.

REMARKS ON THE OCCASION OF THE PRESENTATION OF
THE KEY OF THE WELCH MEDICAL LIBRARY
BY THE ARCHITECT

EDWARD LIPPINCOTT TILTON, F.A.I.A.

*Mr. President, Mr. Vice-President, Professor Sudhoff, Dr. Welch,
Members of the Board and of the Faculty, Ladies and Gentlemen:*

My allotted part is to deliver the golden key, contributed by the Consolidated Engineering Company, and to describe briefly the building, but to do that is to pay a tribute to Dr. Welch without whom the building would be non-existent, for he is, to quote Dr. Osler, "the stock in the soup."

The medical mind seems to be sufficiently eclectic or versatile to enable its possessor to excel in any line. Dr. Locke, as a philosopher; Dr. Oliver Goldsmith as a literateur, whose ability to "write like an angel" but "talk like poor Poll" possibly made him realize an incapacity to conduct a clinic or to cope with a loquacious patient. Dr. Claude Perrault branched into architecture, and designed the beautiful *Colonnade du Louvre*. And Dr. Welch, like another "Admirable Crichton," is as much more to be admired, as the scope of learning of the present exceeds that of the 16th century. An archaeological student of Aesculapian temples and worship; an organizer of public opinion; a Herculean fighter of tuberculosis; a president of medical congresses; an administrator who has convinced obstinate state legislators.

The structure of the building resembles that of a man, in that it has a skeleton and vital parts, without which it cannot function, and the beauty of its exterior is but skin, or ashlar, deep. One dissects the human anatomy, but *constructs* that of a building and dubs it Classic, Gothic or Renaissance, depending somewhat upon the sort of epidermis applied to the steel or masonry bones.

The so-called *Fine Arts* and the surgical arts are allied. In the New York Academy of Design a professor of life-drawing had a skeleton to elucidate anatomy. The professor's name was Bolton Jones,

so the students dubbed the skeleton *Joltin' Bones*. The artist feels the art in his bones; the surgeon feels the bones in his art.

For this building the Renaissance style was adopted as being appropriate for a medical library, since it typifies rebirth and is reminiscent of a classic architecture which would not have been alien to Hippocrates, Galen or to Dioscorides who may have been, to steal Dr. Osler's term, "latch-keyer" to Nero's *Golden House*; or even to Linacre, since Henry VIII sponsored the revival, although rather carried by the tide than controlling it.

The modern library motto is "*Free for All*" representing the Renaissance spirit of release after the long sequestration of learning within cloistered walls, and a library design should exhibit a refinement expressed by the feminine gender of *bibliotheca* and its variants.

In planning the library certain principles were observed for the proper routing of the books through the various working departments, from the receiving and unpacking, to the order, catalog and stack-rooms or book-shelves; for the comfort of the reader by providing ready access to the catalogs, speedy delivery of the desired volume, and sufficient table space and study rooms. Convenience of the staff as well as of the patrons was carefully considered.

The metal book stacks will accommodate approximately half a million volumes, and are the same as were installed recently by the Snead Company in the Vatican Library. They are seven tiers high with many small studies or carrels on each stack floor.

There are eight varieties of decorative marble used in the building. The stack-room floors are of Kasota marble from Wisconsin. In this room the fireplace facing and hearth are of Campan Griotte marble from the French Pyrenees. In the Lobby the marble support for the Statuette of Aesculapius is Rouge d'Automne, suggesting red autumn leaves, from southwestern France. The trim about the doorways is a domestic marble from Missouri with a French name, Ste. Geneviève, and is beautifully impressed with fossiliferous deposits. Two other marbles are from Italy, the Botticino panels and the Black and Gold bases. Imperial white marble is from Rutland, Vt., and the pink marble floors are from Tennessee. The exterior limestone came from Indiana. A complete list, however, of the materials' *provenance* would comprise many states.

It was furthermore necessary to keep within the limits of the appropriation, and to be ever mindful of the warning "For which of you intending to build a tower, sitteth not down first, and counteth the cost, whether he have sufficient to finish it. Lest, haply, after he hath laid the foundation and is not able to finish it, all that behold it begin to mock him, saying, 'this man began to build and was not able to finish.'"

I beg to add my tribute to the Board and the Building Committee who made coöperation a constant pleasure; to Mr. Wood and Dr. Weed, who gave unstintingly of their time; to the Consolidated Engineering Company as contractors; to Mr. Eiser as Engineer, who designed the radiating blood and ventilating lungs; to Salvatore Lascari, the artist, whose beautiful ceiling decorations in this room and over the stairway are replete with symbolism; the Aesculapian serpent with its wings of thought and aspiration, the signs of the Zodiac; the shields of the City and of Johns Hopkins.

But, after all, the building is but a shell for which an iron key might suffice, were it not that the treasures it contains make a golden key more fitting. As Milton says in *Comus*,

"That golden key
That opes the palace of Eternity."

Mr. Vice-President, I have the honor, and it is a great privilege, to tender this key to you.

REMARKS ON THE OCCASION OF THE ACCEPTANCE OF THE KEY OF THE WELCH MEDICAL LIBRARY

BLANCHARD RANDALL

Vice-President of the Board of Trustees

In behalf of the Trustees of Johns Hopkins University I wish to thank Mr. Tilton for this Golden Key. It will be carefully guarded, but will always hang on the outside of this treasure-house for the benefit of mankind.

There is another key which is connected with this building; that is the master key which opens the hearts and minds of men. It is Dr. Welch himself.

THE BINDING INFLUENCE OF A LIBRARY ON A SUBDIVIDING PROFESSION

HARVEY CUSHING

Learning, as with water, is never more fair, pure and simple than at its source.—NAUDÉ.

The dedication of a library is usually a commonplace event which calls for certain platitudes, perhaps even a prayer. The generosity of the donor is praised, the genius of the architect; the educational needs of the people (other than those present) are recalled and assurance given that they will be met so far as a meagre endowment permits. Attention is next drawn to the novel features of the building and then, with some relief, all adjourn for lunch.

This, ordinarily, is the culminating feature of the programme, for Nature, while providing all alike with a ready impulse to consume food, omitted to equip most of us with an intellectual hunger whose recurrent pangs can only be assuaged by the consumption of books, the invention of which she could scarcely have foreseen.

Meanwhile, no reference has been made to that important official, the librarian, who modestly sits in the background with napkin on knee cogitating over possible ways of developing, on the part of those within the radius of his activity, such conditioned reflexes as would salivate them, no less promptly, at the mere sight of the printed page. A cafeteria system perhaps with appetizing books on view rather than distant and uncertain books ordered *à la carte*.

Too often libraries are but the graveyard of forgotten books whose oblivion is disturbed only by the exigencies of the time which has necessitated their transfer, for lack of space, from a smaller cemetery to a larger, where provision, usually inadequate, is made for books still alive and books yet unborn. There, according to age, family, place of origin, or circumstance, their epitaphs renewed and coverings repaired, they are redeposited in burial vaults, soon to be once more as forgotten as were the tablets of Sardanapalus, except by the stray seeker for the curious, or the occasional visitor whose interest lies in

the tomb rather than what it holds. To this sad end do books usually come. It is their ultimate destiny, at public or private expense, thus to get interred.

But there is a spirit-world of books, and the ideas they contain wander forth to haunt and torment those whose grasp they can elude, to solace or stimulate those who have learned the secret of their capture. For these fortunate ones, it becomes possible: "To be present as it were in every age—to extend and stretch life backward from the womb." From the spirit that hovers over some obscure volume, of parentage and birth place unknown, times forgotten may be reconstructed, the sequence of discovery unravelled, the tendencies of thought traced, the relation of yesterday and tomorrow better understood.

This, then, is the true function of the library, to quicken the dormant book so that it may speak again; and with those who treat it lovingly and compassionately, its spirit enters eagerly into communion. To these a library becomes a laboratory for the crystallization of ideas perhaps long expressed, out of which process new ideas have their birth.

Can witchery such as this come from a repository of books that record the bygone happenings and hypotheses of so practical and forward-looking a profession as that of Medicine? Her concepts of one day are antiquated the next and, busy with the accumulation of new facts, she spares little time to integrate them and thinks for the most part only in terms of the present. But philosophers tell us there is no present, that the event of the moment is already history; and if this be so, what is now taking place may possibly prove to have been one of the most significant of the many important things that have happened here since the formal opening of the neighboring hospital just forty years ago.

Ever since the University itself began to take form under the guidance of Daniel Coit Gilman, this place has been a crucible in which experiments in education have fearlessly been put to the test. There may yet be another that will centre in this building, if he whose name it bears can long enough be spared properly to direct its course. Medicine has become so scattered and subdivided there is crying need for someone to lead it from the wilderness and again bind it together.

And whether this can be successfully brought about through the ministration of a Chair of the History of Medicine in close coöperation with a great library, like all other things in life, depends less on principle than on personality. Let us, by looking back, endeavour to follow the steps of our prolific dismemberment.

We know from ancient records that physic "was early fathered upon the Gods," and yet, though the physician in the beginning was half priest, it was not beneath his dignity to put hands as well as thoughts to the therapeutic necessities of his art. Medicine was a compact whole and the Aesculapian disciple heard the master expound the entire subject from authoritative codices. Then the doer was honoured no less than the thinker and, though his material was perishable, the doctor in his way might be no less an artist than those who carved with a chisel, painted with a brush, or built temples from stone and mortar—indeed he might be both, as once was Imhotep.

Though the story is veiled in great obscurity, we may assume that Medicine was still fairly compact when, in the IXth century, Constantine the African was supposedly lecturing at the School, founded, legend tells us, by a Greek, a Jew, a Latin, and a Saracen, in that little seaside town of Salerno. But ere long, to the great misfortune of the maturing profession, a cleavage took place—the first of an unending series. The thinkers rose superior to manual tasks and for centuries became involved in a metaphysical snarl of therapeutic subtleties which led them nowhere. The leech "try'd ev'ry health restoring Herb and Gum," while the despised doers for the most part became degraded into bone-setters, tooth-pullers, or itinerant cutters for stone and the fistula. To anatomize the dead body other than to prepare it for burial was a desecration; to open it during life even for such trifling purposes as the letting of blood was debasing and was left to the barber. Not until long after, when the treatment of wounds-by-gunshot made the barber-surgeon more indispensable than ever in time of war, did his professional status, in a measure, come to be so restored that even to this day the army doctor, now mainly a health official, continues to be called surgeon.

All this has been often told, for early Medicine had not only its thinkers and doers but its recorders. From Greek to Arabic to Latin through the Dark Ages the ancient doctrines were transcribed and

transmitted, accessible only to the classical scholar. The doer meanwhile, educated for the most part solely in the school of experience, could write, if at all, in the vernacular alone, and in consequence we know less about him, for the simple reason that his fugitive compositions were literally read to pieces.

When in the course of time word went forth through Europe that some learned jurists of Bologna were publicly teaching there the principles of civil and later of canon law, like moths to a beacon students from both sides of the Alps, ultramontane and citramontane, secular and ecclesiastical, swarmed by thousands to the plains of Emilia. There a scholastic guild, representing the first organized university of scholars to be under civic protection, came into being; and promptly the inevitable cleavage into subsidiary guilds began to take place.

Separation rather than conglomeration, fission rather than fusion, is the natural law, and, what is more, it is a biological principle that all fissions occur with violence and strife. The interrupted motion-picture has shown that so simple a process as the division of the single cell occurs with an agonizing wrench after a prolonged and unbelievable turmoil of the chromosomes. Could a similarly spaced picture of medical history, or any history for that matter, pass quickly before one's eyes, it would show countless separatist movements accompanied by remonstrance, strife, even bloodshed.

So the *Giuristi* of Bologna resisted mightily when the artists—the *Artisti*—including the students of letters, of philosophy, of mathematics, and of medicine, revolted and broke away from them to start an independent body with a Rector of its own. This, then, was the beginning of segregation in the *Studium Generale* and the process, once started, has acquired in the intervening centuries an ever accelerating speed.

Out of the swarm of *Artisti*, those students inclining to Medicine soon came to be the most favoured and most flourishing group, and, for a time, owing doubtless to the search through nature for influences and substances of possible therapeutic value, other subsidiary and allied arts came into being—the study of the constellations, of fossils, of minerals, of plants, of animals—of everything, in short, formerly embraced in that one of the three philosophies called natural.

One by one each of these studies, grown to its own estate, has come to be wholly separated off from the healing art as no longer strictly pertaining to it, Botany after a lingering contact being the last, to our great loss, to sever its allegiance. So a succession of subjects, born of Medicine, outgrow their therapeutic application, renounce their further relationship to an art that would hold them subservient, and ultimately break away to pursue an independent course.

Medicine of those early days, based almost wholly on theory and observation, may be looked upon schematically as having the structure of a pyramid, all its accumulating subdivisions, even that of its first fundamental discipline, anatomy, meeting at the common Hippocratic point of the patient and his besetting ills.

All this, as is well known, came to be greatly altered when questions, by doubters, began to be asked about the meaning and causes of natural phenomena long regarded as an expression of Divine Will; and soon came the gradual infiltration into the medical art of a novel method of study—no new thing, to be sure, to those who read their Galen thoroughly—but when it led to the discovery that the blood did not simply ebb and flow as had been universally believed, Medicine was shaken to its very foundation.

Slowly but surely, this, the Baconian method of putting the intricate problems of the normal and disordered functions of the body to the test of experiment, made its way, receiving, as time went on, notable accelerations at the hands of such as Gilbert and Galvani, Boyle and Borelli, Mayow and Malpighi, Hunter and Haller, Majendie and Bernard and Pasteur and Cohnheim and a horde of other originators, followers and imitators. Thus, one by one, the biological sciences based on experimentation were born of Medicine just as were the observational and philosophical sciences of an earlier day.

History repeats itself, and in the comparatively rapid development of a new country like our own, all that had taken place in the long-drawn-out development of Medicine we can see done over in miniature: the early priest-physician; the hereditary cure-mongers and bone-setters; belief in the supernatural, in magic and witchcraft; the art handed on by example from Aesculapian to apprentice; the gradual establishment of schools in which the entire field embraced by physic, surgery and sanitation, with a substratum of anatomy and immature

chemistry, might even be covered by a faculty of one as it once was by Nathan Smith at Dartmouth. Even after the experimental method came to have its first exemplar of note in the person of William Beaumont, Medicine remained compact, its attention riveted on the care of the patient as definitely as in those Arabian times when all was comprised in the "Canon" of Avicenna.

But here, as in older countries, the experimental sciences were rapidly coming of age and, by the time this medical school opened its doors, certain of these subjects had reached that stage of maturity they were accepted as preliminary essentials to a medical course, equal if not exceeding in importance even the study of anatomy, which from the days of Mundinus in Bologna had thus far held sway as the major premedical discipline.

And so a new educational structure came to be put together on lines quite different from the old pyramidal conception of Medicine at whose therapeutic apex sat doctor and patient. The structure may be said to have assumed a cuboidal form like two sets of boxed books on a shelf, the first set dealing separately with the three newly matured basal sciences, the second set with the three major and time-honoured clinical subjects of physic, surgery, and child-bearing, while between the two sets was slipped in the book of pathology as intermediary in subject matter.

It was a block system, all departments being on an equality and more independent than interdependent. That each of them, as was natural enough, had an eye on the development of its particular branch of medical science or art and a progressively enlarging blind spot for its relation to the other branches, was probably more apparent to the student-pawn, as he was advanced from one block to another, than to the larger pieces constituting the faculty. To be sure, disadvantages of the system from the standpoint of educating practitioners of medicine were largely offset in the early days of the School by the intimacy and ardor of a small band of enthusiastic workers, who would have made an educational success of any programme; but that is quite apart from this recital.

It is a matter of unwritten record that some twenty-five years ago when on Osler's resignation the first break in the original faculty occurred, a revolutionary proposal was made by some of the junior

members of the faculty that the structure of the School be reorganized in such a way that the existing departments could be brought together, Hippocratized as it were, by the creation of a *super*-Professorship of MEDICINE. It was thought that influences could thus be brought to radiate through all departments, existent and future, so that, while retaining their former autonomy, they could nevertheless show a united front in attacking some of the greater problems in Medicine which equally concerned them all.

The suggestion, in short, was to pyramidalize the school under the leadership of the one person whose training, experience and personality eminently fitted him for such an apical position, and to whom all would have been eager to render allegiance. It was not solely because he was a pathologist and was thus already in contact with all other existing departments, but more because of his broad vision and his wisdom. In our shortsighted and youthful enthusiasm it was felt that a like opportunity for a successful centralizing movement would be unlikely ever to occur again. There was one, and only one, serious difficulty that stood in the way of carrying the project through—the man chiefly concerned, when the matter was broached to him, for reasons of his own, refused the job.

So here and elsewhere during the twenty-five years that have since passed, the old system of progressively increasing decentralization has gone on with a successive splitting off from both preclinical and clinical departments of new groups, many of which slowly have attained sufficient strength and dignity to be recognized as independent units.

More and more the preclinical chairs in most of our schools have come to be occupied by men whose scientific interests may be quite unrelated to anything that obviously has to do with Medicine, some of whom, indeed, confess to a feeling that by engaging in problems that have an evident bearing on the healing art they lose caste among their fellows. They have come to have their own societies, separate journals of publication, a scientific lingo foreign to other ears, and are rarely seen in meetings of medical practitioners with whom they have wholly lost contact.

A distinguished physiologist recently, in commenting unfavourably on the cleavages which have taken place in physiology alone, and on

the impossibility of one man keeping pace with the advances in its varied subdivisions, suggests that physiology as applied to Medicine might well enough be recognized as a science distinct from theoretical physiology, an admission, it would seem, that the subject—and the same is probably true no less of other sciences still clustered about Medicine—has outgrown its rôle as a strictly premedical discipline and is preparing for a life apart on the grounds of incompatibility of temperament.

So the independent science of Astronomy emerged from the days when diagnosis was largely a matter of prophecy wrapped up in divination and zodiacal horoscopes, of which we still have trace in the modified emblem of Jupiter that traditionally begins all our prescriptions; the judicial astrologer of old knew nothing of Millikan's cosmic rays but assumed the presence of something akin to them.

So an independent Botany has emerged from the search in all corners of the earth for medicinal herbs that conformed to the therapeutic law of signatures; our medical schools no longer have their physick garden, yet who knows what of value equal to digitalis may still be hidden in plants, were there modern Witherings to look for them?

So Zoology has grown from the search through the animal kingdom for ingredients with which prescriptions were once littered—the blood of the weasel, the droppings of the dove, the horn of the unicorn, and from the hyena alone, according to Pliny, some seventy-nine medicinal substances. We now smile at the idea of *Animalium natura et eorum medica utilitas* as a serious subject ancillary to Medicine, forgetting our present use of the oil of the cod's liver, the tendons of the kangaroo, the thyroid of the sheep, and much else for which posterity will similarly smile at us.

So modern Chemistry in the hands of Paracelsus began to take form out of earth, water, air and fire and the 'black art' of ancient alchemy. So the science of dynamics is inseparably linked with a young medical student named Galileo and the story of the pulse. And so we may expect other sciences bred of Medicine, whether essentially observational or experimental, to leave home when they have reached independent maturity. Thus, for better or for worse, the gap between the medical sciences and clinic, always difficult to bridge, becomes ever widened as their application to diagnosis and the therapeutic art

comes less and less to be emphasized in the course of their presentation to students of Medicine.

Slowly but surely, as a reaction to the block system, as described, each of the clinical departments has shown a tendency to become separately pyramidalized in such a way as independently to include in its own organization so much of the experimental sciences as are applicable to its particular interests and necessities—miniature medical schools complete in themselves, each striving for its separate institute, its own several laboratories for experimentation or diagnosis, its own library, separate organs of publication and so on. It would be entirely logical if a university department of medicine or of pediatrics or of psychiatry or neurology, or what you will, came to install its own operating plant and to direct its own surgical therapeutics; or, on the other hand, if out of surgery there should develop an independent school with a substratum representative of all other departments, clinical and preclinical, teaching its own applied anatomy and physiology and chemistry and pathology, similar in organization to that remarkable institution in Rochester, Minnesota, a product of our own time.

The only check to the successive formation of these independent institutes, within our medical schools as now organized, is the capacity of the university purse: the only ties that remain in most places to bind separating departments together are the students, whom as yet they share in common and who for long are at a loss to know what Medicine is all about—its emblematic serpent having become so hydra-headed. Were they not a far more docile body than in those Bolognese days when students elected their own Rectors, they would, I fear, pick up their more favoured teachers and swarm in a body to set up a "Studium" of their own liking in some convenient new-found place.

And meanwhile, almost too new to mention, still another fission, the entering wedge to which was driven by Pettenkofer a short fifty years ago, has occurred before our very eyes with the development of separate schools of hygiene for the training of public health officials—schools in which mass prevention in place of individual cure is properly emphasized. It is a movement grown out of that revolutionary maxim, that the health of the people is the supreme law; it assures a

much safer and more pleasant world to live in; it has greatly increased the expectancy of life and may even serve to prolong the span once allotted to us by the Psalmist. But owing to it, just so many more people will remain longer alive to need at some time or other the personal ministrations of a modern Sydenham for their 'vapours,' a Cadogan for their diet, a von Graefe for their sight, a Bright for their kidneys, a Mackenzie for their hearts, and a Lister for much else.

What possible relation, you may well ask, does this rapidly moving account of the cleavages in medicine, past and apparently on the way, have to the dedication of this library and its inseparable association with the establishment of a chair of the History of Medicine? Will this foundation merely mean still another group of specialists having their own societies, organs of publication, separate places of meeting, separate congresses, national and international, and who will also incline to hold aloof from the army of doctors made and in the making? Without lessening the opportunity and encouragement for historical and bibliographical research, on the part of those rare and highly gifted persons capable of it, is there not something far more important for Medicine that can radiate from here?

In the modern development of the physician into a scientist, have we not lost something precious that may without risk of pedantry be brought back to Medicine? Not only has the art of healing, *die Heilkunst*, come more and more to be lost sight of as the doctor arrives at his diagnosis in the laboratory rather than at the bedside, but less and less does he care to be reminded that poetry, history, rhetoric and the humanities once had close kinship with natural philosophy when the *Doctores Medicinæ* took the leadership among the *Artisti*.

The doctor, widely speaking, is woefully ignorant of the history of his profession; indeed he regards bookishness as a form of swank. Some years ago my friend, E. C. Streeter, and I requisitioned a booth at one of the Atlantic City meetings of the American Medical Association in which we displayed a collection of books, pictures and so on pertaining to André Vesal, known as the father of modern anatomy. Alongside of us were stalls in which infant foods, the latest thing in hygienic corsets, the newest tooth powders, the latest surgical instruments, novel electrical appliances, X-ray machines, lighting devices and so on were being competitively displayed. Streeter was to

be on hand to show our wares in the mornings; I was to officiate in the afternoons. In large letters the display was labelled VESALIAN EXHIBIT. "How did it go?" I asked my companion eagerly at lunch on the first day, "Was there a large crowd; did you need help?" "Well," said he, "one man stopped long enough to enquire if I had any samples, and when I politely asked to what he referred, he pointed to our sign and said rather tartly, 'Samples of Vaseline, of course.'"

This story, a little overdrawn perhaps, is reminiscent of the common belief that the discovery of listerine was what brought Lister fame. A pot of vaseline would conceivably have been of more practical use to the enquiring doctor; but I am not so sure of that, and our mistake lay in not having a sample of our exhibit to hand out. It might have made a different man of him.

"I have addressed myself to the Muses," said Gabriel Naudé, "without being too much enamour'd of them; I was pleased with my Studies, but not too addicted to them. . . . Pedantry might have gained something upon my Behaviour and Carriage, during seven or eight Years that I staid in the Colleges, but I can assure myself that it obtained no Advantage over my Spirit." Can something of this old-time spirit of scholarship be recaptured, and is it in any way incompatible with the spirit of research? Can separating departments again be brought together by the tie of a library shared in common, and by the renewed consciousness of a common ancestry and a noble history? Certainly could this happen anywhere, this place, which has been the proving ground of so many experiments in medical education, would seem the most favourable.

A medical historian and one of the world's great bibliographers played a highly important rôle when this medical school was in the making. But curiously enough, that modern Naudé, John Shaw Billings, when his plans for the hospital were drawn, made scant provision for a library. His mind was evidently on larger things—on the general principles of organization and construction of a place where, as he expressed it, the student's knowledge was "not to be acquired from textbooks or lectures, but from observation, experiment and personal experience." He doubtless took it for granted that a library would come into being, as it soon did, for books were essential

to the activity of that closely knit group of young men, all on the sunny side of forty, who first gathered here.

The story of those days can be easily reconstructed from those incomparable early volumes of the hospital BULLETIN, a new thing in American medical journalism so ably directed by that man of many parts, Henry M. Hurd, historian, editor, psychiatrist, and hospital administrator, all packed into one frail but scholarly body. The footprints of Osler are seen in the early establishment of a Journal Club, which met, each Thursday afternoon, in the convenient room soon set apart for a library, to review and discuss articles from the contemporary literature relating to the day's work. And next came the formation of a Hospital Medical Society which, according to an announcement in the first issue of the BULLETIN, was to foregather under the presidency of W. H. Welch on the first and third Mondays of each month.

For one of the early meetings of this society Dr. Billings brought over from Washington forty-four carefully selected volumes, ranging from a XVth century MS. of Rogerius Parmensis down to the first edition of Jenner's *Inquiry*, which served to illustrate the discourse he then gave on rare medical books. A surprising number of that early group showed an interest in medical history and we find ere long in the *Bulletin* this announcement:

The first meeting to organize the Johns Hopkins Hospital Historical Club was called to order by Dr. Osler in the Hospital Library, Monday evening, November 10th, 1890 at 8 o'clock, 30 gentlemen present. Dr. Welch was elected president and Dr. Reese secretary. Dr. Welch made brief introductory remarks to show the value of historical studies to the physician. . . . He presented several histories of Medicine and commented upon the merits of the various historians.

The society soon launched itself on a methodical survey of medical history that began bravely enough with a study of the Hippocratic writings. But the next year, in the effort to plumb the depths of Galen, the Club nearly foundered, proving the wisdom of Garrison's advice that the beginner should back up into the subject rather than start out with its obscure origins. And so the ambitious programme came to be abandoned, the often delightful though desultory papers and essays that characterized the monthly meetings of later days being substituted for it.

Dr. Billings meanwhile had been coming over from Washington to deliver two courses of lectures—and prophetic were his chosen topics. One was on the subject of hygiene which after an interval of some thirty years attained its majority in the establishment of the great Institute across the way. The other course of lectures was on medical history, a subject which now, in turn, will have full opportunity for development under the fostering care of the same person who is reported as having said nigh forty years ago what he doubtless still believes, that “the study of the history of the various medical doctrines broadens a physician’s view and liberalizes his conception of his profession.”

Dr. Billings’ afternoon exercises in those early days, based presumably on his recently delivered Lowell lectures, were, I grieve to say, but slimly attended. Even with his rare gifts it was almost too heavy an historical meal for the undergraduate, and the members of the residential staff had come to find themselves under so great a burden of bedside responsibility that their attendance was prevented. So when Billings moved to Philadelphia on his retirement from the Surgeon-General’s Library after the completion of the first series of the Index Catalogue, the formal lectures were brought to an end.

They came, however, to be replaced by something far more palatable to the students—the Oslerian method of slowly but surely arousing an historical appetite by the proper touch in each exercise upon the historical bearings of the subject under discussion, whatever it might be—an eponymic question asked, the original source-books passed around, a paragraph read, a picture shown, or an incident related. In this way, by the process of repeated inoculations many students who unquestionably would have sidestepped a formal course of lectures became unconsciously impregnated with something much more valuable to them in the long run than the acquirement of just a few more facts concerning diagnosis and treatment.

It will be apparent, I hope, from all that has gone before, what is the burden of my theme—a library made useful not as a passive but an active force; one that is ‘not vocational but cultural, not final but initiative;’ one that will serve as a common meeting ground, where the different streams of knowledge may coalesce; one where an interest in the history of our great profession will so flourish as to permeate

into all departments of a much divided school; a place from which the appeal of scholarship free from pedantism will radiate to long generations of future students—a place, in short, where Medicine, the foster mother of the sciences, once more in close contact with her whole family, will imbue them all with the spirit of that ancient phrase, “Where there is love of humanity, there will be love of the profession.”

As was true a quarter of a century ago, so is it no less true now that there is but one man who by universal accord has the qualities of a Conciliator needed to bring these possibilities to fruition—a man whose services to his profession and to this School are apotheosized by this building—a man who can see the reasons for things while most of us can but look for the things themselves, and who is aware ‘that as our own conquests could not have been won without those which our fathers won, so must the future forever rely for help upon the past.’

He might have asked to be allowed to approach in quiet the evening of life, content with the many successful parts he has already played, but this was not his way. Few know how he has laboured during the first sabbatical year he has ever taken, what hours he has spent in cramped, dark, and unventilated places in order personally to select and bring together what are to be the tools of this new institute that bears his name, never a day without work, never a conversation without its direction on something that mattered. In accepting this new and important rôle he stands, to paraphrase some well-known lines, upon the summit of his years: Not bowed beneath their weight, with feet firm planted and soul undaunted, he stands and contemplates what time has wrought, and trembles not for what was, is, or is to be.

PROCEEDINGS OF THE CONFERENCE ON MEDICAL
LIBRARIES, OCTOBER 17, 1929, WELCH MEDICAL
LIBRARY, JOHNS HOPKINS UNIVERSITY,
BALTIMORE, MARYLAND

The conferences were held in the auditorium of the School of Hygiene, 615 North Wolfe Street. Dr. Welch presided.

CASSIODORUS, THE FOUNDER OF THE WESTERN
LIBRARY SYSTEM IN THE MIDDLE AGES. THE
CHAPTER LIBRARY OF TOLEDO

PROFESSOR KARL SUDHOFF

On a day which is dedicated to scientific libraries and to their significance for the progressive development of Science itself, one must not forget Aurelius Cassiodorus who was of fundamental importance to the library system of the West in the latter half of the Middle Ages. He was the first to recognize how much the latinized West felt the lack of large collections of books and how much the need of these would increase with the passing of time. Since he himself came from the East he was fully aware of the profound significance of cultural centers, such as Antioch, Nisibis, Edessa, Gondeschapur and Alexandria with their great treasure of books, unequalled in Italy and the remaining West. The plans to transport a considerable part of the great Alexandrian libraries to Rome had been thwarted in the very harbor of Alexandria by the burning of the freightships in which the books had been placed. Cassiodorus wished to found in Rome, during his chancellorship, a university according to the Syrian model. After his retirement from office (540) he organized a monastic institution for scientific research, "The Vivarium," in the extreme south of Italy, on a family estate overhanging the Gulf of Squillae. In the Vivarium library he collected not only Greek originals but also Latin translations, especially in the field of medicine, to which he refers in his "Institutiones divinarum et saecularium literarum."

Even before the efforts of Cassiodorus the copying of the scientific

literature of antiquity had been undertaken here and there in monasteries. But he is responsible for the impetus to the production of scientific books in Benedictine monasteries, and it is to this duplication of the manuscripts that we owe a large portion of whatever literature has come down to us from antiquity, especially in the period of the so-called Carolinian Renaissance north of the Alps.

As an example of a library of the mid-period of the Middle Ages, I may mention the Cathedral library of Toledo. This can be reached with difficulty by a narrow ascent from the Claustro near the Cathedral, but the effort entailed is worth the trouble. Although most valuable books have found their way to the National Library at Madrid, the remaining contents of the Toledo library, half Arabic, half Latin, are exceedingly interesting as samples of scientific life in the field of medicine. I shall discuss only the Latin which I studied for several mornings. The medical literature shows no trace of the translations of Gerhard of Cremona or of his school. But one finds, for instance, the first medical opus of the early period of occupation by the Castilian Alfonso VI, a sanitary regimen (supposedly by Aristotle for King Alexander) by Johann of Toledo dedicated to his daughter Therasia. There is also an invaluable document, a medical treatise of Celsus, much of Constantine and of the Salernitan School, material which falls into the period of the Conquest of Toledo (1085), and of beginnings of Christian Scholarship in this old cultural center around the Mesquita of Toledo where the Cathedral was subsequently built. For many decades, for more than a century in fact, Christian and Moslem Scholarship existed there side by side. Two or more languages were used. It was evidently possible to glean the wisdom of physicians from the "Armaria Arabum" without intermediary Latin, and in many cases from Greek translations of the Arabic. It is reported in anecdote that Marcus Toledanus, in the first half of the thirteenth century, went directly to the Arabic libraries in Toledo in order to read Galen's study of the pulse.

At the conclusion of Professor Sudhoff's remarks, he presented to Dr. Welch a reprint of the first volume of *Janus, Zeitschrift für Geschichte und Literatur der Medicin*. This reprint had been especially prepared for the occasion by the publishers, Alfred Lorentz, Publishers and Booksellers, Leipzig, Germany. The dedicatory pages from this reprint are reproduced on the following pages.

Herrn

PROFESSOR DR. MED. WILLIAM HENRY WELCH

anlässlich der Einweihung der

WILLIAM H. WELCH LIBRARY

und des

DEPARTEMENT OF THE HISTORY OF MEDICINE

an der

JOHNS HOPKINS UNIVERSITY

in Verehrung gewidmet

Den 17. Oktober 1929

DR. MED. h. c. ERNST WIEGANDT

Inhaber der Buchhandlung für medizinische Wissenschaften

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and
THE DEPARTEMENT
OF THE HISTORY OF MEDICINE
of
THE JOHNS HOPKINS UNIVERSITY

Thursday, October 17 1929,

Friday, October 18 1929,

we have undertaken to provide a true-to-original reprint of the
hitherto unavailable

STANDARD WORK OF THE HISTORY OF MEDICINE
JANUS

5 VOLUMES. EDITED BY PROFESSOR KARL SUDHOFF

We are herewith presenting to the participators at the opening ceremony a part of the first volume to which, by the courtesy of Dr. Arnold C. Klebs, we are appending the portraits of Professor Dr. William H. Welch and Professor Dr. Karl Sudhoff.

For details kindly refer to the card at the end

ALFRED LORENTZ
PUBLISHERS AND BOOKSELLERS
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AMERICAN ARMY HOSPITALS OF THE REVOLUTION AND THE WAR OF 1812

P. M. ASHBURN

Colonel, Medical Corps, United States Army

Such have been the advances of medicine since our wars with England that the sick man and the physician both move in worlds almost wholly different from those which surrounded their predecessors of a century and a half ago. So different are those two worlds that it is very difficult for us of this world of 1929 to pass back into that of 1776, even in imagination. Words and phrases remain to delude us, and we speak of liberty, freedom, independence, treatment of the sick, causes, prevention and cure of disease, and feel vaguely that we are talking of the same things and thinking the same thoughts as did our forebears when they used these words or phrases. There is reason to doubt this. Almost as impossible as for Benjamin Rush to have grasped our notions of bacteriology, hygiene, and antisepsis, is it for us to realize a medical practice, all included, as it was in Van Swieten's *Diseases of Armies*, in 1776, under the headings "Coughs: Sore Throat: Pleurisy: Peripneumony: Rheumatism: Intermitting Fevers: Quartan Fevers: Jaundice: Dropsy: Vomiting: Cholera morbus: Diarrhoea: Dysentery: Inflammation of Intestines: Phrenzy: Haemorrhage of the Nose: Continued Fever: Scurvy: Lues venerea: Itch: Worms:" We have left that old world of medicine and we may not really enter it again. We can look back, seeing it as through a glass, darkly. Doing that, the thing which looks most familiar, although still strange, is the hospital, or at least its exterior. Then as now, it was primarily a shelter from the elements, consisting of walls and roof. But the likeness can not be carried very far, for the hospital was in a different world, was of itself a different world. As is still the case in war, the architecture of a hospital varied from the fine, as in the general hospital in several commodious homes of Cambridge after the battle of Bunker Hill or that in the college of Princeton after Brandywine and Redbank, to the poorest of improvisations, such as a shelter

of brush and bark, an open shed, a lean-to or a tent like an Indian tepee. One of the most astonishing things in the history of hospital architecture was the proposal of James Tilton, who became Physician and Surgeon General of the Army during the War of 1812, that this last, the Indian tepee, actually be accepted as the model for the military hospital. I quote his own words: "In such cases (cold climates and winter seasons) the best hospital I have ever contrived was upon the plan of the Indian hut. The fire was built in the midst of the ward, without any chimney, and the smoke circulating in the midst of the ward, passed off through an opening four inches wide in the ridge of the roof. The common surface of the earth served for the floor.¹ The patients laid with their heads to the wall round about, and their feet were all turned to the fire. The wards were thus completely ventilated. The smoke contributed to combat infection, without giving the least offense to the patients: for it always rose above, before it spread abroad in the ward. And more patients could be crowded with impunity in such wards than in any others I have seen tried. This was the expedient I employed in the hard winter of '79-'80, when the army was hutted near Morris Town, and I was well satisfied with the experiment" (see footnote 2). This suggests that Tilton was easily satisfied when he had things his own way. That the tepee model had inherent drawbacks is shown by the following note from Colonel Jefferson R. Kean. "In the winter of 1886-7 the interpreter one day asked me to go to see an Indian named Aripape (Deer's foot). I found my patient in a tepee located in a thicket on the banks of Cache Creek some miles above the post. We tied our horses and entered the tepee, and at once had to sit down because of the smoke from a fire burning in the center of it, which filled the upper part of the tepee with smoke. Sitting on the ground, or reclining, as was the usual position of the Indians, one was not annoyed by it. I found that my patient had a stoppage of urine from an old stricture, and on attempting to pass a catheter found that the smallest catheter I had with me would not go through. As the Indian was suffering great pain and declined to be taken to the post, I decided

¹ One of his arguments in favor of earth floors was: "The influence of the ground in neutralizing and correcting all manner of putrefaction is well known. Even putrid meat is sweetened, by burying it in the earth."

to perform an external urethrotomy: passing a sound down to the stricture, I cut down on the end of it and succeeded in cutting the stricture and giving him prompt relief. Jones, who acted as my assistant, sat on the ground at one side of the patient, who lay on a very dirty blanket, while I reclined on my left elbow on the other side. We thus avoided the smoke and were able to work."² Not only did Tilton recommend this type of hospital, but he apparently thought that the rough logs of which it was built possessed magical properties not possessed by trimmed or sawed timber, for Mann tells us: "Upon a fair calculation made by the Assistant Quartermaster General at Plattsburg, where it was necessary to draw the timber one mile, the expense of erecting log hospitals upon Doctor Tilton's plan was greater than with planked or boarded sides. The consequence was the Quartermaster General absolutely refused to give his assistance to erect them upon the plan proposed by the Surgeon General." At the time that he proposed these hospitals, Tilton was inveighing against "pomp and extravagance" in the hospitals, and he had probably made up his mind to have savage simplicity regardless of cost.

It is altogether probable that in the Revolution and the War of 1812, as in the early days of the Civil War, hospitals were ordinarily established in already existing buildings, because it was the natural and simple thing to do. In 1778, the Beverly Robinson house, opposite West Point, was a hospital. Mann tells us: "There were no hospitals in the summer of 1812. The sick were treated in tents. The general hospital at Greenbush had 100 to 130 patients. Later, at Lewiston, from 600 to 700 patients were comfortably accommodated in two spacious barns and in tents. They had bunks and bedsacks. In December, 1813, the Assistant Quartermaster General had appropriated (at Malone) an academy, the arsenal and two private houses, for hospital purposes. Within 10 days, these buildings, sufficiently capacious to accommodate 250 men, were made comfortable; in which each patient had a separate bed. The wards were warm even during the utmost severity of cold."

² It is characteristic of Surgeon Thacher that in his *Military Journal of the Revolution* he should describe the log huts used by the line of the army at Morristown in the winter of '79-'80, and omit all mention of these remarkable hospital buildings.

At French Mills, that same winter, huts and hospitals were erected at great labor. The hospitals were here constructed on Dr. Tilton's plan. There was great suffering by the sick and the modern military game of "passing the buck" was not unknown. "The death, sickness and distress at French Mills excited general alarm. The great mortality had obvious causes for its existence. In all such cases, censure will fall on some department, and as each was disposed to exonerate itself, upon which was blame more probably to have alighted than the medical" Dr. Lovell, one of the most able and attentive surgeons of the army, emphatically observed, "It was impossible for the sick to be restored, with nothing to subsist upon but damaged bread."

The Malone hospital, which had 250 patients in December, had 450 by February, many of them cases of pneumonia, spotted fever (meningitis) and diarrhoea, when the approach of the enemy made necessary their transfer through 70 miles of wilderness to Plattsburg or Burlington, in midwinter. The sick were transported in sleighs, as were those of the American Archangel expedition more than a century later, and it is noted in both instances that many of them improved greatly on the long, slow trip, despite cold, rain and snow. The hospital at Burlington included "in addition to the hospital house, 20 rooms of the common barracks." Mann thus describes Greenbush, opposite Albany. "Here are barracks for the troops of the United States Army, sufficiently capacious to accommodate 4000 men, with adequate quarters for officers. On an eminence 60 feet higher is the hospital, which may accommodate one hundred patients. Attached to the hospital department are quarters for the surgeons, offices and kitchens for the subordinates of the hospitals. The wards of this hospital are too small in their dimensions, both for health and convenience; being only 20 feet by 16, and 9 feet in height." Just why a ward of that size was too small for health is not understood, unless it was meant that, being small, it was certain to be overcrowded, as though a ward had to hold a certain number of people, regardless of its size. In another place Mann tells us that wards should be 30 feet by 24, and 11 feet high, and that such a ward should accommodate 20 patients, if not sick with contagious diseases, and should require but two nurses, provided the meals be prepared elsewhere.

"Each patient should be provided with a separate bed in a moveable bunk. When bunks are attached to the walls of a room . . . they are not easily cleaned. The proper dimensions of a bunk are 6 feet 3 inches in length, and 2 feet 8 inches in breadth."

Mann says that a military hospital should never be more than one story in height. "The attendants of a second story have additional duty to perform. . . . Attendants, rather than give themselves the labor of descending a flight of stairs to execute their duty, take liberties of throwing filth from windows above, to the annoyance of patients below, without possibility of detection." The hospital tent in use in the War of 1812 accommodated from 16 to 18 patients and was said to be satisfactory for use from June 1st to the end of September, in the climate of northern New York. Of such tents was the "flying hospital" at Lewistown in 1813. In conjunction with this tent hospital two large barns were also very satisfactorily used as wards. "These were the most eligible summer hospitals which I saw during the campaigns." Our divisional ambulance companies may have had and hospital companies did have their analogies in 1813. "The flying machines, called volantes, drawn by horses, (an improvement of Larrey, chief surgeon of the French Army) are useful in open countries, where a corps is assigned to accompany them on the field of battle, upon Larrey's plan. Flying hospitals during campaigns are often temporary. Three new establishments were made on the Niagara in 1813, in consequence of removes. These removes and establishments are attended with trouble, anxiety, and much labor to the surgeons, as well as distress and pain to the patients, especially over bad roads."

Turning from the subject of hospital structures, let us consider hospital administration. That practically nothing was known of the subject in 1776 need not surprise us, for hospitals were almost unknown in America, and military hospitals were known only from British Army practice, which was practically entirely regimental hospital practice. Neither the British nor the Americans had a general hospital in or near Boston at the time of the battle of Bunker Hill. Shortly thereafter the Americans established one at Cambridge with Dr. John Warren in charge. Such hospitals were but poorly equipped, if at all, and some months later Dr. John Morgan, Director General,

appealed to the public for dressings, bedding and other equipment, and later issued a letter of thanks. He still later made a similar appeal in New York, and from a statement concerning this we may obtain an idea of that "pomp and extravagance in hospitals" which so angered Tilton. Morgan said that he had collected "two thousand rugs and blankets, near as many bed-sacks and pillows, sheets, fracture-boxes and other useful articles, which could not have been replaced in 1777 for much less than \$300,000; which is equal to the whole amount of what I have ever drawn or expended for the General Hospital in the space of a twelve month, including the pay of all the officers and all hospital expenses of every kind. . . . Yet the General Hospital has had the constant charge of a number from two or three hundred to a thousand sick and upwards to provide for and attend." Nothing would more quickly induce the suicide of a modern hospital administrator than to have to operate on such a budget. Despite the general agreement as to the extreme poverty of Revolutionary hospitals, we have Thacher writing (Nov. 1775) "Those brave men, while in the service of their country, receive in sickness all the kind attentions from physicians and nurses which their circumstances require. They have the prayers and consolations of pious clergymen, and are destitute of nothing." Thacher was an optimist, or the prayers of pious clergymen covered a multitude of needs.

Mann tells us "the medical staff in 1812 possessed no documents relative to management of military hospitals nor the diseases to which armies are exposed."

Concerning the choice of a hospital site, Mann recommended "elevated lands, which command a free circulation of air and an abundance of good water. . . ." "They should be erected at a distance from extensive woods, where it is possible; in an open country, remote from marshes, or swampy lands; and beyond the influence of winds, whose currents of air are injected with miasmata generated on sunken lands."

The following regulations are among those adopted in the General Hospital at Burlington.

Floors and walls were frequently washed with soap and water or lime water especially in hot weather. In cold weather, the floors were covered with one-half inch or more of sand, renewed daily, and

the walls were white-washed. Bunks were cleansed and bedstraw burned with each change of occupant. Bedsacks were washed once in two or three weeks and straw changed. Natural ventilation without chilling drafts was sought. In summer, windows and doors were open all day, in winter for a short time daily. A spit-box was supplied for each bed and was filled with fresh sand twice daily or oftener, a fact which testifies as to the spitting habits of our forebears. Close stools, bed-pans and urinaries were removed as soon as employed. No cooking was done at the hearths of the sick-wards. Wards of infectious or contagious diseases were less crowded than others. Surgical and febrile cases were not put in the same ward. Venereal and itch patients had special wards. Patients, when first admitted, were given a tepid bath, clean shirts and clean beds. Daily washing of face and hands was ordered. Patients were shaved every second day, "shirted" twice in a week. Whenever a patient left his bed it was at once put in order.

These regulations enable us to understand, in part at least, why Burlington hospital was considered a model. A regulation that a record should be kept of each patient, showing name, rank, organization, date of admission, casualties, when discharged or death, was adopted for this hospital in the winter of 1813-14. Prior to that and in most other hospitals, no record of sick and wounded was apparently kept. From May 1, 1814, to April 30, 1815, there were admitted to this hospital 1456 patients of which 1274 were discharged, 109 died, and 73 remained under treatment at the end of the period (*Med. Recorder*, 1918, p. 179). As is still usual in war time the number of medical officers was inadequate. In 1775 and again in 1776, Congress authorized one surgeon and four mates for the general hospital service for each five thousand men in the Army. James Tilton recommended the appointment of one hospital surgeon and two mates for each division or major-general's command of the army. He, like the Continental Congress, was considering only the general hospital service, and he was even more stingy than the Congress. Mann tells of an occasion when he and two mates constituted the medical attendants for between 600 and 700 sick and wounded, and of another occasion when he was actually left alone with 730 sick and wounded.

As for nursing, that service was performed mainly by "orderly men"

detailed for a day at a time. "For the most part, he is only anxious for the expiration of the time he is obliged to remain on duty, which is 24 hours." Women nurses were at times employed. "Since a great part of the business this servant undertakes is to dress the patients' meat, to prepare drinks for the sick and to wash for them (for they should do this at a stipulated price) a woman is always to be preferred, where a choice can be made." However, women nurses were not numerous. Horner (*Med. Exam.*, 1852, New Series VIII, 774) tells us that "The crowd of wounded brought in by the field of Bridgewater reduced unavoidably attentions to individuals. . . . Under these circumstances many soldiers were treated in the outskirts of the hospital by their wives or females having an attachment for them. With such assiduities recoveries took place which would scarcely have followed in the ordinary hospital practice."

The mortality in most hospitals can not be known, because of lack of records. It has been quoted for Burlington hospital for one year. Mann took exception to Doctor Gallup's statement that the deaths at Burlington in the winter of 1812-13 numbered 700 or 800 in four months, and wrote: "The troops at Burlington did not number over 1600, and the deaths did not exceed 200." Even that mortality, 12.5 per cent in four months indicates a very severe epidemic.

Thacher estimated that the American loss of life in the Revolution was 70,000, but there is no indication as to the number of deaths in hospitals.

In 1781 we find Tilton comparing the general hospitals at Princeton and at Bethlehem as follows: "After the battles of Brandywine, Redbank &c. a general hospital was established in the college of Princeton where I was a prescribing surgeon. The sick and wounded flowing promiscuously without restraint into the hospital, it soon became infectious and was attended with great mortality. I caught the jail fever myself and narrowly escaped with my life. After a tedious illness I got leave to return home for the recovery of my health. . . . At Bethlehem was another hospital, and I found it convenient to rest there a day or two. During my stay it was natural to inquire into the state of their hospital. The method I took was to propose a competition, not whose hospital had done the most good, but whose hospital had done the most mischief.

I was requested to give an account of the Princeton hospital: I stated with all the exaggeration I could with truth, not only an affecting mortality among the sick and wounded soldiers, but that the orderly men, nurses and other attendants on the hospital were liable to the infection; that I had myself narrowly escaped death and that five other surgeons and mates had afterwards been seized. I was answered that the malignancy and mortality of Princeton hospital bore no comparison with theirs; that at Bethlehem not an orderly man or nurse escaped, and but few of the surgeons; that one surgeon, Jos. Harrison, a fine young fellow, distinguished for his assiduity, had died. And to give me some idea of the mortality of their hospital, one of the surgeons asked me if I were acquainted with that fine volunteer regiment of Virginia, commanded, I think, by Colonel Gibson. I answered I knew it only by reputation. He then went on to say that forty of that regiment had come to their hospital, and then asked me how many I supposed would ever join the regiment? I guessed a third or a fourth part. He declared solemnly that not three would ever return, that one man had joined his regiment; that another was convalescent and might possibly recover; but that the only remaining one besides, was in the last stage of the colliquative flux and must soon die. I was obliged to acknowledge the hospital at Bethlehem had been more fatal than that at Princeton."

The diseases which caused the greatest morbidity were diarrhoea, dysentery, peripneumony or pneumonia, malaria, smallpox (especially in the Revolution) and "jail" fever or typhus, most of which was probably typhoid. James Tilton (*Med. Repository*, III, 407) reported that the total amount of diseases, in the Third Military District, which included New York City and its surroundings, for the period of the war was: "Intermittent fever, 625; Remittent fever, 1256; Typhus fever, 551; Dysentery, 1269; Diarrhoea, 1945; all other diseases, 6309." It is very interesting that among almost 12,000 cases, there were only seven surgical operations, two amputations, one injection of a hydrocele, and four ligations of the saphena vein for varix, this last giving but discouraging results. By 1928 army standards, in that number of cases there would be one hundred and seventy operations for appendicitis alone. But surgery was not then the popular road to fame and fortune. Lack of anaesthetics and certainty of infection

made it serious and horrible, and to be avoided if that were possible. Battle injuries and accident cases of course had to be treated, but the treatment was apt to be mostly what is now considered dirty dressing work. W. E. Horner stated that in such work his fingers became so sore, from constant dabbling in pus and water, that he could seize nothing without pain. Smallpox was exceedingly common during the Revolution and inoculation was the prophylactic measure employed. It seems, in general, to have produced an exceedingly mild form of the disease. Thatcher tells us, under date of August 5th, 1776, "Colonel Whitcomb's regiment, consisting of 500 men, has now gone through the smallpox in this town by inoculation, and all, except one negro, have recovered." Again, in April, 1781, he tells of the inoculation of 500 people with but four deaths. He then praised the use of an extract of butternut as a mild cathartic before inoculation, instead of calomel and jalap.

Isaac Senter reported that in May, 1776, "I generally inoculated a regiment at a class, who had it so favorable as to be able to do garrison duty during the whole time."

It is astounding to think of man practicing medicine with so few diagnostic aids as were available in the Revolution. There was no clinical laboratory, no use of the microscope, no urinalysis or blood examination. Even the stethoscope and the clinical thermometer were not in use; not to mention such refinements as the ophthalmoscope. The one instrument of precision was the watch to time the pulse, and it was by no means always used. In general terms the investigation of a case consisted in the use of the unaided five senses, not least of which was smell. In general, also, treatment was directed to symptoms and not to diseases. Fever, cough, jaundice, pain, phrensy, dropsy, vomiting, haemorrhage, paralysis, were the things treated. The cause or nature of no single disease was known. Most of them were attributed to "miasmata" or to meteorological conditions.³ But the symptom recognized, whatever its cause, was

³ An interesting light is thrown upon the then existing notions of epidemiology by the following extract from the first regulations for the Medical Department, written by Surgeon General Lovell in the summer of 1818. Therein it is provided that among the duties of Assistant Surgeons General (whom we should now call Chief Surgeons) was the following: "From an examination of the book containing

treated heroically, in a way to justify the existence of homeopathy, eclecticism, mesmerism, Christian Science and all other dogmas and isms which tend to allow nature and her curative powers a chance. Let us consider a few examples. James Tilton discussed the treatment of typhus (typhoid) as follows:

"Although often compelled to let blood in the commencement of this fever, we were cautious of repeating this operation; and were disposed to avoid it altogether, when not demanded by a full pulse and other pressing circumstances. After bleeding, if that operation should be thought necessary, a vomit was deemed of excellent use, by opening and squeezing all the glands of the body, and thus shaking from the nervous system, the contaminating poison before its impressions are fixed. With this view the earlier the vomit is administered the better. During the prelude or those marks of approaching danger above described, a vomit may prevent the fever altogether.

"When the fever is formed, mercury is of the greatest importance, so long as any signs of an inflammatory diathesis remain. This Sampsonian remedy has the power of subduing all manner of contagion or infection that we are yet acquainted with. Thus, besides syphilis, itch &c., without fever, it is regarded as specific in smallpox, measles, scarlatina, influenza, yellow fever &c., and is found to be not less successful in the early stages of Jail fever. The manner in which this remedy sets all the secretions afloat may serve in some measure to

the Diary of the weather, account of the Climate, complaints prevalent in the vicinity, etc., from suitable inquiries concerning the clothing, subsistence, quarters, etc. of the soldiers, he will discover as far as practicable the probable causes of Disease and recommend the best means of preventing them."

And in Lovell's report (Lovell himself reported that exposure to cold and moisture, not bad food or water, was responsible for the great prevalence of diseases of the lungs and bowels during the War of 1812 and in 1817) upon diseases in the Northern Division in 1817 we find the following recommendation: "It should be made the duty of every surgeon and mate, having the charge of a Hospital, together with his quarterly report to the Head Quarters of the Division, to transmit an account of the local situation of his station, of the climate, the state of the weather during the time being reported with respect to temperature, wind, rains, etc., to state at large the general symptoms of the complaints among the troops, as well as every peculiarity of disease: to investigate and as far as possible report their causes."

explain its beneficial effects. Hence it is that in yellow fever, remitting or any other fever, if we can only touch the patient's mouth with mercury, we regard him as safe." James Tilton was the friend, ardent admirer and favorite pupil of Benjamin Rush, so we may accept his remarks on treatment as representing the thought of the day. Can anything show so clearly as does the history of medicine man's ability to ignore most palpable facts, to see only in accordance with his established beliefs?

However, there were a few departures from the fashion. For example, Mann tells us of the militia in 1814, "The most usual practice among them was to blister the [typhoid] patient almost from the crown of his head to the soles of his feet; so that the chief difficulty was to remove the irritative fever induced by this *empirical, slovenly* practice. In some calomel had been employed, but generally without obvious effect, except increasing the danger of the patient."

The wounded did not escape the same general and heroic treatment as the sick. James Mann cites a case of sabre wound, in opposition to Larry's advice regarding immediate amputation in cases of wounds of the knee-joint. "The patient was immediately put to bed, his leg extended, was largely bled, purged and put on a vegetable diet. The lips of the wound were immediately brought into apposition by strips of adhesive plaster. This wound was cured by the first intention without suppuration." In another place he says, "The more blood expended the better, in wounds of the viscera, provided life is not exhausted, when hemorrhage is stopped."

It may be asked if there was nothing to praise or admire. There was much. First of all, there was the age-old loyalty and devotion of medical men to their patients, which makes it very easy to accept Tilton's statement that "more surgeons died in the American Revolution in proportion to their number, than officers of the line; a strong evidence this, that infection is more dangerous, in ordinary life, than the weapons of war; and should be a powerful excitement, with all concerned, from motives of self-preservation, as well as honorable duty, to use all possible care and diligence, in warding off that greatest of all evils, the *plague of Infection*."

There was beginning recognition of the danger from neglect of proper disposal of faeces and of the contagiousness of diarrhoea and

dysentery, observations forgotten in much later years. Tilton wrote: "The utmost care should be taken to remove all excrementitious matter from the wards. . . . If there be no running stream at hand, everything of this sort should be sunk deep in the earth and covered every day. . . . The importance of separating those ill of fevers, fluxes, &c., from the wounded and such as have only slight topical affections, will readily be perceived. Many a fine fellow have I seen brought into hospital, for slight syphilitic affections, and carried out dead of a hospital fever" (55).

James Mann (249) gave the following sound advice: "After selecting suitable ground and pitching tents, the first care is to dig sinks, at a proper distance from the hospital, most necessary receptacles for all kinds of filth, and which should daily be covered with earth." He also said, in speaking of the prevalence of dysentery and diarrhoea: "These diseases (12) may, in some measure, be obviated by obliging the men to cook their food in the form of soups. This regulation should be ever enforced upon men in the field. . . . An inattention to a proper dietetic management was among the causes of diseases and mortality, incident to our troops: to which may be added filthiness, and an intemperate use of ardent spirits."

It is pleasing to find an appreciation of the benefits of milk and vegetables. "Milk is the grand restorative of convalescents, and vegetables generally are useful, in combating that putrid tendency to which all hospital patients are so liable" (Tilton, 55). We also find James Mann praising the use of ipecac in dysentery. Credit for pioneer army use of ipecac for dysentery is usually given to Colonel A. A. Woodhull, who used it a half century later, during the Civil War.

Mann, writing of September, 1814, said: "The dysentery was at this period very obstinate; the bloody discharges and tenesmus incessant, and the prostration of strength as usual most dangerous. In this state, relief was generally obtained from the injections of a decoction of ipecacuanha, sometimes combined with laudanum. . . . The decoction was often rejected immediately; it had however some effect even then, so that by repeating it several times, it would finally remain and give relief."

And young William Beaumont, licensed to practice by "The Third Medical Society of the State of Vermont as by law established" was in the service, keeping a diary wherein he expressed his emotions, but doubtless forming his yet immature mind in preparation for the first truly scientific investigation to be carried out by American Medicine.

BIBLIOGRAPHICAL GAPS

ARCHIBALD MALLOCH, M.D., M.R.C.P. (Lond.)

Librarian of the New York Academy of Medicine

May I be permitted one word of congratulation to Professor Welch and to Johns Hopkins on the erection of this beautiful Library and rooms for the exposition and study of the history of medicine. When a small boy, I visited the Hospital as a patient of Dr. Halsted's and later came much under the influence of another great man who would have loved to have been here today and to pay tribute, and hear tribute paid, to his colleague. Thus, I have had very tender feelings towards Johns Hopkins Hospital and Medical School. In reminiscing of his Baltimore days Sir William Osler once said to me, adding to a phrase of Oliver Wendell Holmes, "In addition to a three-story intellect Welch has an attic on top." When I first came to the Hospital I mischievously shone a beam of sunlight with a mirror from the "bridge" into the room of Max Broedel, interrupting him at his work, and dropped marbles from the galleries in the Administration Building to hear and see them bounce below. The Resident in Surgery was Dr. Harvey Cushing, and in his room, hung with baseball penants, he introduced me to the book, *St. Winifred's*, which Kipling has so unkindly criticized. Miss Nutting also lent me *Kidnapped*, but little did I think I should ever return to talk about books and bibliographies—or bibliographical gaps.

Medicine has probably been better served by its bibliographers than any other branch of learning. In fact we cannot realize how lucky we are unless we try to find out what has been written on subjects which lie outside our particular field. What more could we ask for than for a Conrad Gesner, a Haller, a Watt, a Callisen, a Choulant, a Billings, a Fletcher, a Sudhoff, and a Garrison? The other day at the annual meeting of the Medical Library Association I pointed out that many bibliographical needs in medicine remain unsupplied, and I apologize for referring to some of the same points again.

INDEXES TO AUTHORS

Many of you must know the three volumes of the *Catalogues de la Bibliothèque Impériale, Catalogue des Sciences Médicales*, Paris, 1857-1889, the work of J. Taschereau.¹ It is a magnificent chronological list of the older medical books arranged according to a classification by subjects, the tables for which are given at the end of each volume. Of course one can find one's way about these tomes, but how infinitely easier if we only had an author index. Dr. Arnold C. Klebs told me of such an alphabetical card index at the Bibliothèque Nationale, but when I sought photostats of this from the Librarian, he replied that the expense would be too great. Dr. Klebs, who is always full of ideas, also pointed out to me the crying need for a new, up to date, edition of Dr. Ludwig Choulant's *Handbuch der Bücherkunde für die ältere Medizin*, which was first published in Leipzig in 1828, octavo. The book might be enlarged to include the writings of later men.

Doctors often come to medical libraries knowing the names of several distinguished physicians or surgeons who have a special interest in certain subjects or have written on them, but our catalogues and indexes are often not helpful. The reason for this is that the writings are not articles which appeared in medical magazines, for these are nearly all listed under the subject in the *Index Catalogue of the Surgeon General's Library*, but are in the form of brief essays in encyclopaedias or dictionaries of medicine or chapters in one of the various systems (1). For instance, only some of the articles in Kolle and Wassermann's *Handbuch* were indexed in the *Index Catalogue* under subject and none by author. *Nelson's Loose-Leaf Living Medicine* was only partly indexed under subject headings and *Osler's Modern Medicine* was indexed in an irregular fashion. Let us suppose that a doctor is interested in the writings of Laennec. He will not find in the *Index Catalogue of the Surgeon General's Library* an author or subject entry for Laennec's article on "Anatomie Pathologique" which appeared in the second volume of the *Dictionnaire des Sciences médicales par une Société de Médecins et Chirurgiens*, 60 vols.,

¹ Mr. Leonard L. Mackall, the well known bibliophile, has pointed out to me that it is thought that the great Littré was responsible for the medical part of these catalogues.

Paris, 1812-1822. Of course this article is referred to in lives of Laennec, but some of the best papers by important Frenchmen were written for such encyclopaedias and they are extremely difficult to learn about. On the other hand, papers which appear in periodicals receive great attention as they should, and Laennec's earlier article on the same subject which came out in a journal is indexed under "Anatomy (Pathological.)" Seeking further proof of the indexer's love for periodical literature, I took down the first volume of the *Journal de Médecine, Chirurgie, Pharmacie*, etc. Paris, 1754, and chose at random an anonymous "Lettre sur l'épilepsie" on pages 403-416. Then, turning to the first series of the *Index Catalogue of the Surgeon General's Library* under the heading "epilepsy," I found, sure enough, the article had not been forgotten. To index chapters of systems of medicine, surgery, etc., in our author indexes and catalogues of our libraries would give great help to our readers.

INDEXES TO SUBJECTS

We glibly say that Benivieni (2) was the first to give a written description of senile gangrene, that Thomas Willis in 1674 was the first to differentiate diabetes insipidus from the other form, and that the first description of a typical case of appendicitis is that of Lorenz Heister in 1755 (3). Perhaps we take too much for granted when we speak or write of the history of our knowledge of certain diseases, symptoms, or methods of diagnosis or treatment. Many facts of importance to the history of medicine will be obtained only if we read in the light of modern knowledge those scantily indexed tomes of collected cases which have been published. I refer to the books of "consilia" and "consultationes," but their name is legion. When I talked to Colonel Garrison about the need for subject indexes of the most important of these clinical notes he pointed out to me that Withington (4) has a good chapter on case histories, but until I looked up "Medicine (Clinical, Cases of)" in the *Index Catalogue* I had no idea how many such works there were which should be searched through—four hundred and eleven in the first series and one hundred and ten in the second. Some of the great men in medicine stand as the authors of such books—Bartholinus, Benivieni, Boerhaave, Malpighi, and so on:



Whilst we are considering subject indexes we should not forget Albrecht von Haller's wonderful bibliographies (5), of anatomy, botany, medicine, and surgery. His books have author indexes only. By the way, Haller quite frequently summarizes the case reports in the "consultationes" which he notes.

Now it might be thought invidious on such an occasion as this for a guest to make suggestions, but may I draw Professor Welch's attention to the great need for such indexes, although it is not the most important thing to be done towards advancing the study of the history of medicine. I am sure he will consider the question, has he not done so already. Who knows but that he may find a volunteer for the work, a born bibliographer, who has great patience, is accurate, and has a good general knowledge of medicine and of Latin in some of its nine canine varieties. Such a man would prove to be a true benefactor.

THE INDEX CATALOGUE AND QUARTERLY CUMULATIVE INDEX MEDICUS

At the present time we are very dependent upon the *Quarterly Cumulative Index Medicus* and the *Index Catalogue of the Surgeon General's Library*, for together with the old *Index Medicus* they are the handiest and most used of our bibliographical tools, but some of us think they need sharpening just a little.

Osler said of the *Index Catalogue* and *Index Medicus* (6): "No undertaking in bibliography of the same magnitude with a special subject has ever been issued and its extraordinary value was at once appreciated all over the world. . . . So general were Dr. Billings' interests that all departments of medicine are represented, and there is not a subject, as there is scarcely an author of note ancient or modern not in the catalogue"; and Colonel Garrison (7): "No one has ever given to secular history or to physical science what Billings has given to medicine and the medical historian." Dr. Thayer (8) in speaking of Dr. Billings used these words: "It is impossible to estimate the debt of American medicine, the debt of the whole world to this man," and Dr. Welch was no less enthusiastic in his praise (9): "I question whether America has made any larger contribution to medicine than that made by Dr. Billings in building up and developing the surgeon-general's library and in the publication of the *Index Catalogue* and the

Index Medicus. . . . Dr. Billings was the greatest bibliographer in the history of medicine."

It is necessary in the first place to give in the shortest possible manner the history of the publication of the *Index Catalogue of the Surgeon General's Library*. The first series began with the letter A in 1880 and the last or sixteenth volume which completed the alphabetical author and subject index in the same alphabet was published in 1895. The first volume of the second series, came out in 1896 and the last volume in 1916. The third series began in 1918 and is only about half completed. The *Index Medicus*, which was a subject list of books and articles in all branches of medicine with an author index at the end used to come out every month, as an annual index to supplement the periodical cumulations of the *Index Catalogue*. The first series began in 1879 and was completed in 1899. It ceased publication for a short time and *Bibliographica Medica*, issued from Paris, took its place in 1900, 1901 and 1902. The *Index Medicus*, second series, began in 1903 and finished in 1919. The third series, which was a quarterly publication, began in 1921 and ceased in 1926 and in 1927 the *Quarterly Cumulative Index*, (published by the American Medical Association, 1916-1926) was joined with it under the name of *Quarterly Cumulative Index Medicus*, appearing four times a year, the second quarter incorporating the first quarter and the fourth quarter incorporating the third, so that there are two volumes a year.

The first and second series of the *Index Catalogue* revealed the ideal method of covering the large field of medicine. Under the names of ancient and modern authors one found all the books and theses written by them which are on the shelves of the Surgeon General's Library, as well as references to the lives of those men and indications as to where there was a portrait. Under subject headings, which were placed in the same alphabet as the names of authors, were put practically all the references to periodical articles (giving the author's name) which had appeared up to the time that particular volume of the series had gone to press, as well as a list arranged alphabetically by author of all the books and theses on that subject. The Surgeon General's Library collected the old or classical books of medicine very rapidly and continued to gather them in. Thus in the first volume of the first series there are six editions of books by Albucasis, but when

the first volume of the second series was published in 1896, sixteen years later, the Surgeon General's Library had acquired six further editions. As another example, Volume XI of the first series, published in 1890, contains very numerous references under the headings "Pneumonia." Volume XIII of the second series, published in 1908, lists the books on that subject which were acquired by the Library between 1890 and 1908 and also all the authors and titles, with references to periodicals of practically all the articles on the same subject, which had appeared in magazines taken at the Surgeon General's Library between those dates. The great use of the *Index Medicus* lay in this. Suppose a man wanted to look up the subject of pneumonia in 1907. He looked up all the works and articles referred to in the first series but found that the volume containing pneumonia had not yet appeared in the second series of the *Index Catalogue*, so he obtained the titles of books and articles on that subject from the *Index Medicus* in the volumes issued between 1890 and 1907, and if he were wise he would also look up the *Index Medicus* for 1889 in case some articles had been missed in the 1890 volume of the *Index Catalogue*. If the writer of a medical article was in luck, he might find that his subject had already been covered by the first series and that the volume in the second series on the same subject had appeared just the year before. Then he had only one or two volumes of the *Index Medicus* to search through. For instance, he might in 1912 have been delighted to find that the subject of spleen had already been treated of in the volume of the second series of the *Index Catalogue* issued in 1911.

The volumes of the third series are much less bulky than those of the first and second. There are perhaps three reasons for this. For instance, the first volume was published in 1918, the last year of the European War. Perhaps another reason is that the Library has grown so large that there are not nearly as many editions of the ancient authors required to complete the collection. The third reason may be that the appropriation for the Library is not so generous as it used to be, so that it is impossible to purchase as many books and periodicals.² With, and after, the appearance of Volume VI (Ge—end of letter

² See Addendum.

I) a new arrangement is followed. Instead of the writings on a particular subject being indexed up to the time that particular volume goes to press, no articles or books published after December 31, 1925, will appear under any subject headings. For instance, when the heading "Pneumonia" appears in the third series, the doctor who is writing on the subject, say in 1931, will find in it no references to articles published after 1925 and he will have to turn to the *Index Medicus* or *Quarterly Cumulative Index Medicus* for 1925, 1926, and then to two volumes every year of the *Quarterly Cumulative Index Medicus* from 1927 to 1931.

It seems quite possible that the third series will be completed about 1935 or 1936, although this is merely a guess. After that, the Surgeon General's Library has the intention not to issue a future series at all but to issue a year-book every year, listing, I believe, not the magazine articles on a subject but merely the new books, theses, and perhaps pamphlets, which have been acquired by the Library during the previous year. Thus the whole alphabet, A-Z, will be covered every year instead of every twenty years. If this scheme is carried through and the continued publication of series abolished, then the doctor of 1970 will have an extremely difficult task before him in writing a medical monograph or comprehensive paper. He will of course look through the first and second series of the *Index Catalogue* and what is good of the third series, but he cannot possibly think of finding a volume in a future series which will cover his subject for about twenty years and yet another which would cover it for a still further twenty years. Instead of that comparatively easy piece of searching, he must needs look through two volumes a year of the *Quarterly Cumulative Index Medicus* for a couple of scores of years. Surely Congress should be induced to build for the future as well as for to-day. It is quite possible that if the series are not continued, opinion will grow so strong by 1970 that the cumulative series will have to be begun again. The material for the volumes of a series can be amassed continuously day by day by copying the entries which are made for the numbers of the *Quarterly Cumulative Index Medicus*. Let us work for adequate appropriations by Congress to assure the continuation of series after series of the *Index Catalogue*, each volume of which would list publications of the previous twenty years. Then

the doctor of the future would not have to consult two volumes a year of an index for the same period—forty volumes instead of one. Indeed there would be sixty in all, for twenty “year-books” would have to be searched, as the *Quarterly Cumulative Index Medicus* has not a full enough list of books, especially foreign ones, and pays no regard to theses.

At the annual meeting of the Medical Library Association in 1928 at New York there was a vigorous discussion of the *Quarterly Cumulative Index Medicus* (10), and a committee was formed with Miss Janet Doe at its head to present some recommendations to the American Medical Association. In 1928 1,275 journals were indexed for the *Quarterly Cumulative Index Medicus*, but quite rightly they were not all indexed fully. The Committee of the Medical Library Association knew of about 500 additional periodicals, many being mere penny trumpet blasts, which were scanned carefully for good useful articles and as a result a list of about 250 journals was sent to the American Medical Association with the suggestion that the worthy papers in these should be indexed by the *Quarterly Cumulative Index Medicus*. I believe that the American Medical Association now indexes some 60 of these—and we are very grateful. These additions include such journals as *Acta dermatologica*, Kyoto; *Bulletins et mémoires de la société de chirurgiens de Paris*; *Journal of Helminthology*, London; *Die Medizinische Welt*, Berlin; *Proceedings of the Connecticut State Medical Society*, New Haven; *Public Health*, London; *Transactions of the College of Physicians of Philadelphia*; *Zeitschrift für Kinderforschung*, Berlin; *Ars médica*, Barcelona; *Archivos americanos de medicina*, Buenos Aires. And of its own accord the American Medical Association added such periodicals as the *Japanese Journal of Experimental Medicine*, Tokyo, and the *Revista oto-neuro-oftalmológica y de cirugía neurológica*, Buenos Aires. A recent editorial in the *J. A. M. A.* (11) does not mention the fact that the Association was approached by the Medical Library Association. At the meeting of this Library Association held at Cleveland early in September, Dr. Morris Fishbein very kindly came and spoke about the *Quarterly Cumulative Index Medicus*, but said it would be impossible, owing to the great expense, to index the valuable articles in the list of periodicals submitted by the Medical Library Association, but finally agreed that if

the medical libraries would send references to articles in these journals which in their opinion were worthy of inclusion in the index, then such suggestions would receive the greatest consideration of the editors of the *Quarterly Cumulative Index Medicus*. This will be extra work for the medical libraries, but we are going to strive manfully in this way to have some more good articles indexed, realizing, however, that our efforts might be regarded as merely spasmodic.

To quote the editorial in the *J. A. M. A.* (11): "In the library of the American Medical Association about 350 of these periodicals were indexed completely, every article noted by its subject and every author indicated in its proper place. In the Army Medical Library the remaining periodicals [about 1,050] are covered by a staff which indexes many of the periodicals completely and looks over all of them to include everything that seems to have permanent value." The other day I looked up to see if some articles and addresses in the *Bull. of the N. Y. Acad. Med.* were indexed or not, and was surprised that perfectly respectable articles by B. P. Watson (12), W. S. Thayer (13), Harvey Cushing (14), Geo. E. de Schweinitz (15), F. H. Garrison (16), and A. C. Klebs (17) were not to be found in the *Quarterly Cumulative Index Medicus*.

Concise case reports are of the greatest benefit to anyone who is writing a monograph on a disease or form of treatment, such as Dr. Halsted's account of "The Operative Story of Goitre" (18), and "Ligations of the Left Subclavian Artery in its first Portions" (19), and Charles P. Emerson's "Pneumothorax" (20) bear witness. In the list of periodicals which are indexed in the *Quarterly Cumulative Index Medicus*, Jan.-March, 1929, it is stated that "only selected articles" in the *Proceedings of the Royal Society of Medicine* are indexed, so I chose from the index to volume XXI of these *Proceedings* some articles or case histories which I thought would be helpful to physicians who were seeking information about a particular disease. Here are some which were not indexed in the *Quarterly Cumulative Index Medicus*; A. Abrahams, "Two Cases of Familial Acholuric Jaundice in Brothers" (21) and "Primary Arterial Fibrosis" (22); C. Worster-Drought, "Acromegaly with Unilateral Paresis of the Sixth and Seventh Cranial Nerves" (23); O. L. Addison, "Tuberculous Osteitis of the Skull" (24); A. G. Phear, "Addison's Disease" (25); D. C. Hare,

"Erythromelalgia Secondary to Arterio-Sclerosis" (26); F. Parkes Weber, "Congenital Jaundice in a Man aged Sixty" (27); "Erythrocyanosis Frigida Puellarum" (28)—due to silk stockings, no doubt; "Non-operated Mammary Carcinoma of Fifteen Years' Duration in Woman with Strongly Positive Wassermann Reaction (29). I have omitted the titles of some other papers that were not indexed and no doubt there were a great many other good ones missed. I hope you will agree with me that notice should be taken of these articles. At any rate these are the cases doctors wish to know about when they ask the bibliographical department of the New York Academy of Medicine to help them find what has been written. The accounts of the majority of these cases in the *Proceedings of the Royal Society of Medicine* will never appear elsewhere.

A number of doctors and other workers in medical libraries have told me that they did not think that the present *Quarterly Cumulative Index Medicus* was as complete as the *Index Medicus* before the European War. This might be a mere opinion, not warranted by facts. So I asked Miss Sayer of our bibliographical department to look up the true state of affairs. We chose subjects that would not have too many papers written about them. The first was urticaria and the *Index Medicus* for 1910 listed fourteen articles, and no others could be found in the *Dermatologisches Centralblatt*, in the *Archiv für Dermatologie und Syphilis*, and the *Annales de dermatologie et syphilis*, but one other in the *California State Medical Journal* was found listed in the index to the *Journal of the American Medical Association*. Thus ninety-three and one-third per cent of the papers were given in the *Index Medicus*. Of the papers on urticaria published in 1924, fifty-seven per cent were found in the *Index Medicus* for 1924–1925, and in the *Quarterly Cumulative Index Medicus* for 1927, seventy per cent of the published reports were found, the others being listed in the *Centralblatt* and *Jahresbericht*.

Again, taking the disease erythromelalgia, two papers were found in the *Index Medicus* for 1910 and one other "Is Thrombo-angiitis Obliterans Related to Raynaud's Disease and Erythromelalgia?" (30) listed in the *J. A. M. A.* (index) under several headings but only under "Thrombo-angiitis" in the *Index Medicus*. In the *Index Medicus* for 1924–1925, twenty-eight and one-half per cent of the papers on

erythromelalgia were found, and in the *Quarterly Cumulative Index Medicus* for 1927, seventy-five per cent (three present and one absent) of the articles were listed. Are we not justified in hoping for, and working for, something nearer to perfection in the *Quarterly Cumulative Index Medicus*?

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- (26) *Loc. cit.*, 271-2, Clinical Section, 23-4.
- (27) *Loc. cit.*, 79-80, Clinical Section, 3-4.
- (28) *Loc. cit.*, 1160-2, Clinical Section, 84-6.
- (29) *Loc. cit.*, 752-3, Clinical Section, 64-5.
- (30) *Am. Jour. Med. Sc.*, N. S., 1910, v. CXXXIX, 105.

ADDENDUM

In discussing this paper after its delivery at Baltimore, Col. Ashburn, Librarian of the Surgeon General's Library, pointed out that though the volumes of the third series are thinner than before, this is merely because the paper is now thinner; and that they really contain many more pages of the same size, not less, as I supposed. I wished to compare the amount of material in the two series and the only *absolutely* accurate way of doing this is to count the number of books, theses, and journal articles listed under the same letter in both series, taking into account the period of years covered by each volume. This would be a very laborious undertaking and a reasonably accurate result can be obtained by comparing the number of pages required for the same letter. The type used and the size of page is the same in both series. It might be objected that not so many of the

older text books were added during the period covered by the third series and that there are somewhat fewer headings in large type employed in this series than in the second, but these differences do not offer an adequate explanation for the discrepancies noted in the table given. In the M volume of the third series issued in 1928 no articles in journals received after the end of December, 1925, are listed, so that in this case only the material for twenty-one years has been indexed. Still, if this is borne in mind, the contrast in the amount of material listed is very marked. I do not think that anyone would question the statement that more good, as well as more bad, papers have been published during the last twenty years or so than before.

VOLUME(S) CONTAINING LETTER	SERIES OF INDEX CATALOGUE	YEAR(S) OF ISSUE	YEAR OF ISSUE IN PREVIOUS SERIES	NUMBER OF YEARS COVERED	NUMBER OF PAGES
A	2nd	1896	1880	16	828
A	3rd	1918-1920	1896	22	990
I	2nd	1902-1903	1885-1886	17	575
I	3rd	1926	1902-1903	24	288
M	2nd	1905-1906	1887-1888	18	1236
M	3rd	1928	1905-1906	23(21)	609

DISCUSSION

Dr. Welch stated that it was obvious that the matter raised by Dr. Malloch in his paper would afford material for discussion for the balance of the afternoon, but that in view of its importance he felt that it was proper to consider calling together a conference for the discussion of the whole problem of the *Quarterly Cumulative Index Medicus* and the *Index Catalogue of the Surgeon General's Library*. He then proceeded to introduce the next speaker.

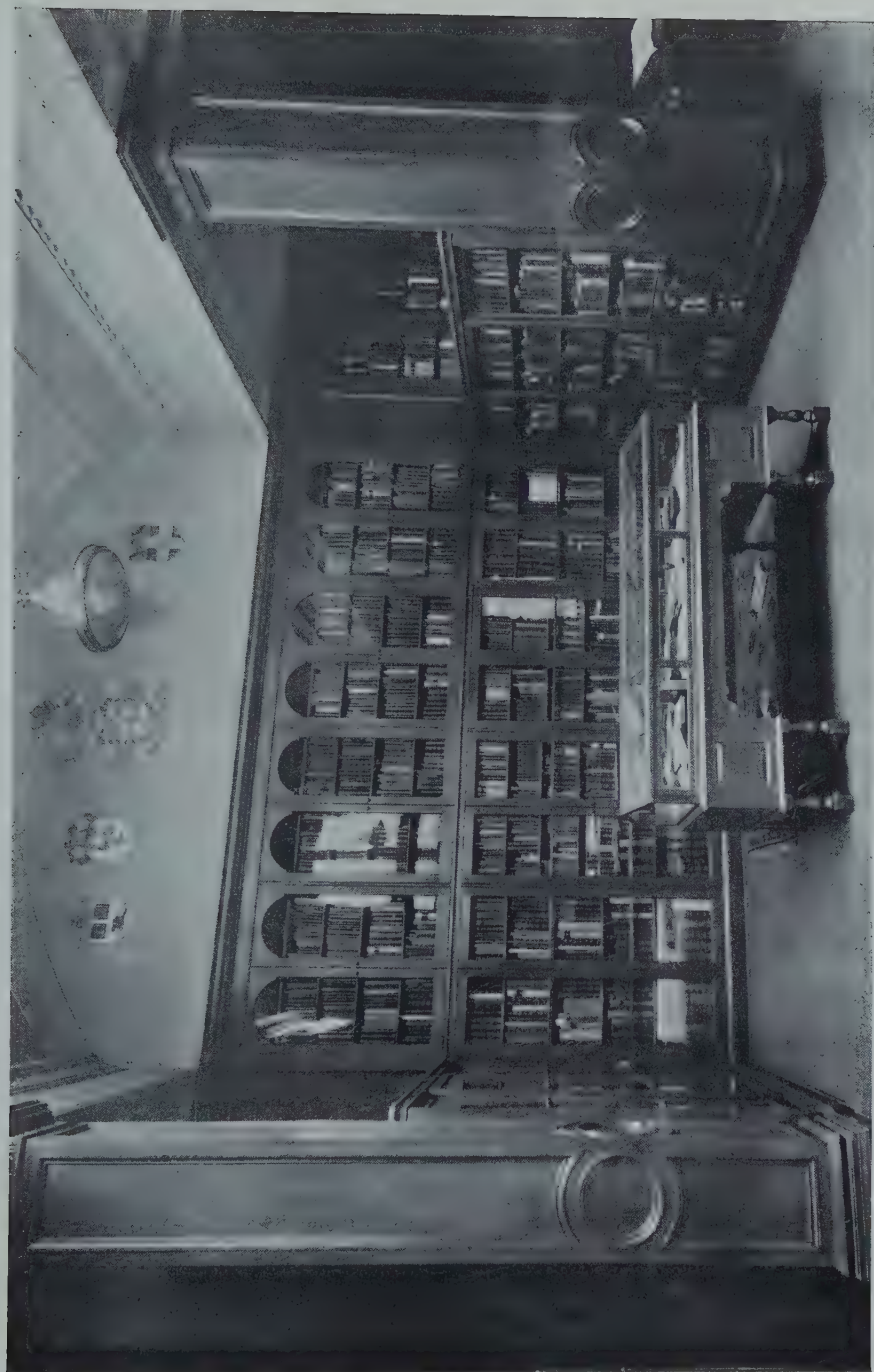
THE OSLER LIBRARY

W. W. FRANCIS, M.D.

Librarian

It is a happy coincidence that the same year sees the dedication of two libraries, the one bearing the name of Osler, the other that of Dr. Welch—old friends and colleagues, two of those first professors to whom this Medical School and Hospital owe so much of their greatness. Looking backward, Osler put it on record that to help the library of the Medical and Chirurgical Faculty of Maryland to escape from its dingy quarters in St. Paul Street, first to the bright house in Hamilton Terrace and then to its present handsome building, was one of the great pleasures of his life. And he looked forward confidently to the apotheosis of the Hospital library which we are now celebrating. How he would have rejoiced to see this day!

Had he lived, he would be here; and he would not have come empty-handed. Therefore, as his librarian, I have brought two of his books which, being uncatalogued duplicates, do not belong to the present Osler Library and can be offered by me in his name. They are, first, *Vitae illustrium medicorum*, by Pierre Castellan, Antwerp, 1617, and secondly, *De Plinii et aliorum medicorum erroribus etc.*, by Nicolaus Leoniceus, the 3rd or 4th edition, printed at Basel by Heinrich Petri in 1529. Neither book is rare, but both have associations. The former bears the Osler book-label (necessarily cancelled) and the latter an autograph note of purchase signed W. O. For more than one reason the Leoniceus seems appropriate to the occasion. This is the 400th anniversary of the printing of the book which, even so, has lived only four times as long as its author; and Leoniceus, like the man we honor today, was a humanist and a great teacher and reformer of medicine. Moreover, he also was not a practitioner, but at the age of 96 was still, as he justly claimed, 'doing the public a greater service by teaching those who cured them.' The parallel need not be pursued further. Leoniceus attributed his longevity to his having 'delivered up his youth chaste to man's estate,' and our hero is for-



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RECEIVED BY THE DIRECTOR OF THE BUREAU OF THE ARMY, WASHINGTON, D. C. 20315
ON 10/10/54
FROM THE DIRECTOR OF THE BUREAU OF THE ARMY, WASHINGTON, D. C. 20315
SUBJECT: [illegible]

The first of these is the fact that the
 second of these is the fact that the
 third of these is the fact that the
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My second collection, *Collected Poems*, is another, somewhat less successful, attempt at "collecting" a lifetime's work. The title of the book is, of course, a little bit of a misnomer, for I have not collected all of my poems, but it is a collection of poems that I have collected, and I have collected them for a long time. I have collected them for a long time.

[illegible][illegible]

... 1941 ...



OSLER LIBRARY, MCGILL UNIVERSITY

cil this proud boast, 'I doubt if any man can more truly say of this book, *Comes viæ vitæque*.'

During his fourteen busy years in Montreal there were cobwebs in his pockets, but he spent more time and money than he could afford in a nearly successful attempt to collect all Canadian medical and scientific journals. These he gave to the Medical Library when he left Montreal in 1884. In Philadelphia he began to collect American medical classics—and to read them, for he was never merely a collector. Here in Baltimore, in the nineties, with a purse which might have bulged if he had ever tried to close it, he bought freely. Many of the old books were acquired at this period, especially editions of Vesalius and of Linacre, Harvey, Browne, and other English worthies. Current books and journals were constantly passed on to friends and libraries to make room on his shelves. Booksellers' catalogues appeared on the breakfast table and were always with him on railway journeys. In the summer holidays, usually spent in England, the old bookshops were his happy hunting ground. But it was not until after 1905 when he went to live in Oxford, a booklover's paradise, that the present collection really took shape.

It is sometimes asked why he left the bulk of his library to McGill rather than to Johns Hopkins. With the riches of the Army Medical Library in Washington so readily accessible, he shared Dr. Welch's opinion that old medical books are almost superfluous in Baltimore. But the real explanation may be quoted in Osler's own words: 'As the collection grew, plans for its disposition had to be considered. Already at the outbreak of the War my son, Edward Revere, aged 18 . . . had shown unmistakably the direction of his tastes, and it was agreed that he should take the works in general literature while the scientific books should go to McGill. . . . Though a wanderer, living away from Montreal for more than half my life, the early associations I have never forgotten. The formative years were there with the strong ties of head and heart. As a young, untried man, McGill offered me an opportunity to work and to teach; but what is more, the members of the Medical Faculty adopted me, bore with vagaries and aggressiveness'—aggressiveness is a word that could be applied to him only by Osler himself—'and often gave practical expressions of sympathy with schemes that were costly and of doubt-

ful utility. That they believed in me helped to a belief in myself, an important asset for a young man, but better had by nurture than by nature. Alma Mater, too, counts for much, and as a graduate of McGill I am proud of her record. Had I not seen the day of small



A HITHERTO UNPUBLISHED PORTRAIT OF SIR WILLIAM OSLER BY THE LATE
H. S. TUKE, R. A., DATED MARCH 2, 1885

things? Did I not graduate in the days of the Coté Street school? I may quote Fuller's sentiment: "He [Fuller's Good Bishop] conceived himself to hear his Mother Colledge alwayes speaking to him in the language of Joseph to Pharaoh's butler, But think on me, I pray thee, when it shall be well with thee." Then there is the natural feeling of

loyalty to the country of one's birth and breeding. These are the considerations which decided me to leave the special collection to my old school at Montreal.

'As the books increased,' he continues, 'the hope matured into a scheme for a library which would have a definite educational value, and a literary and an historical interest. To break a collection into sections is hazardous, but I considered that, after all, this would form a special part of the Medical Faculty Library just as the latter is a section of the University Library.' He decided, therefore, to follow his own plan and group the books in eight sections. The first section, which is the chief and original feature of his library and catalogue, he called *Bibliotheca Prima*. It was planned to contain, in chronological order, and in a comparatively small number of works—there are about 1,700 items in this section—the essential literature of the evolution of science, represented by the works and lives of men who, in his opinion, were contributors of the first rank to science. His list of these 'primarian' authors comprises 67 names, beginning with Hippocrates and ending with the nineteenth century. He tried particularly to obtain the fundamental contribution in each subject, whether this was represented by a great Aldine edition like that of Aristotle, or a ten-page pamphlet of Röntgen.

The second and largest section, more strictly medical, contains the works of authors not classed among the outstanding pioneers. The third, called *Litteraria*, deals with the relations of medicine and general literature. The next three sections are History, Biography, and Bibliography, almost entirely modern books; the seventh and eighth are *Incunabula* and *Manuscripts*. Of the books printed in the fifteenth century, technically known as *incunabula*, he succeeded in acquiring 136, some of them with funds contributed for the purpose by his brother, the late Sir Edmund Osler.

'The Library,' Osler wrote, 'is for the use of students of the history of science and medicine, without any other qualifications, and I particularly wish that it may be used by my French-Canadian colleagues, who will find it rich in the best of French literature.'

Before the War, Osler had begun to give effect to what he called his ambitious desire to prepare for printing a '*catalogue raisonné*, with biographical and bibliographical notes.' In 1919 he remarked that

he needed ten years of not too senile leisure in order to complete both collection and catalogue to his satisfaction. *Dis aliter visum*. Before his death, at the end of that year, he requested that the catalogue should, if possible, be finished and printed before the books went to Montreal, and he named four editors: his bibliophile friend, Mr. L. L. Mackall, of Savannah; Dr. Archibald Malloch, of McGill, now Librarian of the New York Academy of Medicine; Mr. R. H. Hill of the Bodleian, and myself. That we have been privileged to carry out this labour of love we owe to the authorities of McGill, who were content to wait patiently for the books, and to Lady Osler, who whole-heartedly devoted the rest of her life to the task which, to our lasting sorrow, she was destined not to see quite completed. She died in August 1928. Besides having financed the catalogue, she generously bequeathed £10,000 for the upkeep of the Library. It is the intention, and it was Osler's wish, that the collection be added to and gaps filled, as funds and opportunity may permit. Let me commend to his friends and disciples the possibility of still contributing in this way towards the completion of his work and the perfecting of his chosen monument.

The catalogue, entitled 'Bibliotheca Osleriana,' was published in May 1929 by the Oxford Press. It is a book of over 800 pages in large format,² and has been welcomed by those who know—by Dr. Welch first and foremost—as a contribution of real value. Fundamentally it is Osler's own work. The interesting arrangement of the books is wholly and the annotations largely his. It will always be useful to many who have not access to the library itself, and it may well continue to be quoted long after its author's other works are forgotten. As he himself once wrote, 'There is no better float through posterity than to be the author of a good bibliography.'

The Library, officially opened on May 29th, has been housed by McGill University in a beautiful room, convenient to the Medical Library, in the fire-proof Strathcona Medical Building. The books are arranged on the shelves in the catalogue order, except his own writings and those of some of his favorite authors, Sir Thomas Browne, Burton,

² Colonel Garrison (*loc. cit.*), otherwise laudatory, complains of its depressive effect on the rectus abdominis; but the editors did not contemplate the bibliophilia or Osleriolatry that could induce a devotee to read such a work in bed!

Rabelais, and others. These occupy the place of honour at the end of the room, in an alcove in the centre of which is a panel bearing his portrait in bronze, an enlarged replica of the excellent medallion which was made by Vernon, in 1903, for Dr. H. B. Jacobs. Behind the panel his ashes, as he desired, repose among his beloved books.

Thus is fulfilled in essence, if not in all its details, a hope he first expressed about twenty years ago in an unpublished paper entitled 'The Burrowings of a Bookworm.' It is written in his own hand, not by 'William Osler' but his other self, the equally loved if somewhat less reputable 'E. Y. Davis.' After discussing the fate of some great private collections he wrote this passage, which I may quote in conclusion: 'I like to think of my few books in an alcove of a fire-proof library in some institution that I love; at the end of the alcove an open fireplace and a few easy chairs, and on the mantelpiece an urn with my ashes and my bust or portrait, through which my astral self could peek at the books I have loved, and enjoy the delight with which kindred souls still in the flesh would handle them.'

SIX BOOKS

LEONARD L. MACKALL

Neither a Medical Historian nor a Medical Librarian, I am a mere Bibliophile-Bibliographer or Bibliographical Bibliophile—whichever of the two is interested in the physical makeup and appearance of a book mainly with special reference to its text and its historical significance, *not* its mere appearance or mere rarity *per se*.

A confirmed Peripatetic for a third of a Century, I speak now (briefly and informally) because (to borrow the classical phrase of "Mr. Dooley" himself in explaining the choice of candidates for Honorary Degrees at the Yale Bicentennial) I "come so far" or because I happen "to be around"—or both—and chiefly because Dr. Welch, whom we have all come to honor, has urged me to "present a paper" here and now. I shall do less—and also more—than that, as you will presently both hear and see!

During many years I have had various concrete reasons for devoting a large part of my time to bibliographical comparisons and to ferreting among many thousands of volumes in many libraries in many countries; and all of this rather unusually varied experience has made me acutely aware of the absolute necessity of going back all the way to the Original itself; and acutely aware also of the fact that the differences between the various editions of what is conveniently supposed to be one and the same book are only too apt to be far greater and more material to our very purpose than is suspected even by real scholars, unless they happen to be bibliographers also. It is simply impossible to guess correctly in advance how great these differences may be. Actual comparison of the books is not only indicated, but is absolutely indispensable.

But alas! as is well known, the original editions of really great books are now rapidly becoming very rare; and of many old works very important for serious historical research there never were but one or two editions, most of the surviving copies of which have long been anchored in European libraries, for ever. Hence the absolute necessity of intelligent and ever-watchful collecting. Nothing could be

more absurd than the widespread and supersapient but silly idea that a rare book is merely rare and otherwise of no possible interest to any really sensible person.

There are indeed Collectors and Collectors! and it is unfortunately also true that many of those who write most fluently about their hobby have practically no real bibliographical background or bibliographical knowledge except in connection with the momentous but often ephemeral question of the misprints which serve to identify various printings of the works of very modern and usually contemporary authors.

It is not generally known, but yet well worth recalling, that one of the greatest and most experienced of the practical bibliographers of all time, Dr. John Shaw Billings himself here thirty years ago, at a meeting of the Johns Hopkins Hospital Medical Society on December 16th, 1889, exhibited and discussed forty-four typical and important "Rare Medical Books," and his wise and still timely words, with the titles of the books, were printed in the third number of the Johns Hopkins Hospital Bulletin, February, 1890. He says for instance:—"The term 'rare' as applied to medical books has a relative and not an absolute value. The bookseller might indicate as rare, a book of which he saw only two or three copies in the course of a year, although there might be fifty or sixty copies of the work constantly in the market, and one would be found in every large public library. A rare medical book may be defined as one of which a copy is only offered for sale in any catalogue once in five years, although copies of it may be found in most of the great national medical libraries and in a few private collections. A very rare medical book is one which only appears in the trade about once in a generation or once in twenty-five years, and of which copies can only be found in four or five large public libraries. There is no necessary connection between the rarity of a book and its cost, nor between either the rarity or cost and actual interest or value, either historical or practical. The cost of a rare book depends mainly upon whether it is a book that is sought for, that is, in demand by collectors. If there is no demand, its price may be very small."

Dr. W. W. Francis, Librarian of the Osler Library now at McGill University, Montreal, kindly reminds me that that Library now con-

tains (though Osler forgot how he got it) the Manuscript of Dr. Billings's earlier paper on "Methods of Research in Medical Literature" read before the Association of American Physicians in 1887 and printed in its Transactions. Billings there says strikingly:—"From the days of Galen to the middle of the seventeenth century, bibliographical work was the most important business of the medical teacher. The great majority of the writers of the Middle Ages busied themselves, not so much with observation of facts, or with experimental inquiry, as with seeking to find out what Hippocrates, Galen, Avicenna, and other old masters had said about the matter. When the discovery was made that, in order to determine the precise anatomy of a part, the function of an organ, or the results produced by a disease, it was best to look for one's self, instead of consulting the fathers, and when this discovery had become popularized, bibliographical and historical research fell for a time into neglect." Some of such "bibliographical" activities come also properly under the head of Philology.

Without the careful, scholarly and systematic Bookcollecting of Billings at the Surgeon General's Library in Washington, and of Doctors Osler, Welch, Kelly, Thayer, Cushing, Jacobs and others in Baltimore, the many most interesting papers by those men and others at the Johns Hopkins Hospital Historical Club would of course have been not only impossible but utterly unthinkable. Thus, for instance, long ago Dr. Welch bought a copy of Benivieni's "*De abditis nonnullis ac mirandis morborum et sanationum causis*," printed and published by Philip Giunta at Florence in 1507, and famous as the first collection of reports of post-mortem sections—one of those carefully selected "Rare Medical Books" shown here by Billings in 1889, and still conspicuously not present in the great Osler Library.

However, it was not until he exchanged his chair of Hygiene and Public Health for the very new one of the History of Medicine (the first of its kind in America) that Dr. Welch began collecting books on a large scale, and he went abroad for a year for that special purpose. Fortunate combinations of circumstances have given us (meaning me) some personal knowledge of his methods of procedure, and of his notable success in carrying out his unique undertaking. Perhaps it should not be surprising that one who has taken such a leading part in

organizing or carrying on such very important and varied institutions and organizations as the Johns Hopkins Medical School, Maryland State Board of Health, Johns Hopkins University, Carnegie Institution, National Academy of Sciences, American Medical Association and Rockefeller Institute, should next in turn collect important books in the Grand Style with signal success. Anyhow such is most certainly the case,—so far as I am entitled to an opinion personally or as a member of the Library Committee of the Grolier Club. It is also true that very few Collectors train themselves quite so elaborately before beginning! But Dr. Welch is wiser than most Collectors!

Today is being officially dedicated and opened the “Proper Home” of anything important in the wide field of the Welch Library. We borrow the expression from the fine phrase of Sir William Osler, for seven years President of the Bibliographical Society of England and America, and (as appears so clearly in Cushing’s wonderful Life of him) unquestionably one of the most intelligent, wisest, and most thoughtfully unselfish bookcollectors of all time. Of the biographical essays in Osler’s volume “An Alabama Student,” 1908, and elsewhere, the greatest living authority in the field, Geheimrat Karl Sudhoff, who is with us today, has said in print in his famous “Mittheilungen zur Geschichte der Medizin” (VIII, 448; 1909), that “It seems to me that there is more *echt historischer Geist* in these biographical essays by an English clinician than in many a learned medico-historical work of a German professional historian.” Osler’s fine phrase to which we refer puts it thus:—“The true bibliophile has a keen pleasure in seeing an important document in its proper home” (Canadian Medical Association Journal,” Sept. 1912, p. 834). Collectors who really act in accordance with this maxim are always too few, but that they actually exist is shown concretely by various recent gifts of important books to the Welch Library, even from abroad.

The Peripatetic Collector indeed has always a convenient alibi! You will remember that in old Sebastian Brant’s “Ship of Fools” (after which Osler named his bibliophile club in Baltimore), as quaintly translated by Alexander Barclay and printed by Pynson in 1509 (being thus the earliest known book printed in England to refer to the discovery of America, since Ptolemy is here one of the Fools for

thinking that he already knew the whole world!) the first Fool, the foolish bookcollector says:

“But if it fortune that any lerned men
Within my house fall to disputation
I draw the curtyns to shewe my bokes then
That they of my cunnyng sholde make probacion”

the mere possession of the book being quite sufficient! At least this Fool shows the book! It is not so well known that Brant here merely follows Petrarch's “*De Remediis Utriusque Fortunae*,” which being translated by old Dr. Twyne or Twine as “*Phisicke against Fortune, as well prosperous as Adverse*,” London 1579 (copy in New York Academy of Medicine), reads more safely:—“There be some that wyl seeme to knowe whatsoever is wrytten in theyr bookes at home: and when there is mention made of any matter of learning, that booke, saythe he, is in my studie, supposing that were as much to say, as it is here also in my breast, and so with a proude looke they say no more: A ridiculus kynde of people.”—This man merely claims that he has a copy of the book but he does not attempt to produce it—possibly for the very best of reasons! Alas! we really own at a distance several books such as Allut's “*Étude Biographique et Bibliographique sur Symphorien Champier*” (Lyon 1859), an elaborate and careful piece of work, handsomely printed, probably in a limited edition, promptly recommended highly by Brunet and now so rare in fact that Dr. Welch has sought it long in vain. At present we can only promise to hand over this and other items as soon as they again become accessible.

But we have right here now with us half a dozen other books which we feel sure that Dr. Welch will be very glad to have, and which we therefore take very great pleasure in presenting herewith to his Library—not only as being interesting and important in themselves, but particularly as indicating the kind of thing that is or may be still on the Library's list of *Desiderata*, written or unwritten. We must take this opportunity to call special attention to the fact that the Welch Library still needs acutely all of Haller's famous great “*Bibliothecas*,” which have hitherto successfully eluded even Dr. Welch's most persistent efforts. Let us all help him to get them all!

Our own bibliographical contribution today consists not in "presenting a paper" but in giving the following six books, donated "alphabetically by authors" thus:

1. Astruc's "Mémoires pour servir à l'Histoire de la Faculté de Médecine de Montpellier," Paris 1767, quarto.

Osler wrote in his copy finally acquired in 1912 (Osler Library Catalogue No. 6219): "A scarce book, for which I have been looking for years" etc. Since a long list of Astruc's writings is given in this volume published after his death, we may call attention to the fact that Gibbon's reference in his Autobiography, under 1779 (Miscellaneous Works, 1814, I, 232; taken by Lord Sheffield from "Mémorial E," extending to July 1789; Gibbon's Autobiographies ed. Murray 1896, p. 318), anent Servetus, to "Astruc de la structure du coeur, tom. 1, pp. 77-79" is merely a strange slip of that learned pen (we have examined the original manuscript in the British Museum), writing "Astruc" instead of "Senac," to whose well known work (in the Osler Library) Dr. Francis called our attention years ago.

2. Browne's "Religio Medici, A Letter to a Friend, Christian Morals, Urn-Burial, and other Papers," Boston 1862. First Edition of this book, which unsuspectingly includes the spurious fragment "On Mummies" really written as a hoax by James Crossley and printed by Wilkin in 1835, IV, 273, but later omitted by him. It was a copy of the 1862 "Second Edition" of this Boston book, with these words on the verso of the title page, but otherwise merely reprinted without any change from the plates of the First Edition, that Sir William Osler treasured more than any of his other books. It is inscribed: "W. Osler, Coll. SS. Trin., Lent Term, 28.2.68", . . . and "I doubt if any man can more truly say of this book 'Comes viae vitaeque.' 6.12.19 W.O."—this last note being written during his last illness! See Osler Library Catalogue Nos. 4446, 4444, 4539, 4547. (I am giving a copy of the "Second Edition" to the Tudor & Stuart Club founded by Sir William and Lady Osler at this University in memory of their son Revere.)

3. Fernel's "Universa Medicina," Paris 1567, folio.

This volume contains (on folio 303 verso) what may perhaps be the earliest account of Appendicitis, but it is rather vague. See Journal of the American Medical Association 1923, Feb. 24, p. 572/3 and

March 17, p. 789 and references given there. See our next number. Dr. Esmond R. Long's recent valuable volume "A History of Pathology" (Baltimore 1928, p. 65) says: In 1567 he (Fernel) described under the term 'iliac passion' what was unquestionably appendicitis in a girl nine (seven) years old, with post-mortem examination, the only clear case of the disease on record until Heister's in 1711." Fernel had died in 1558, but the passage in question seems not to have been printed until 1567, in the present volume.

4. Heister's "Medical, chirurgical, and anatomical Cases and Observations. . . . Translated from the German by George Wirgman," London 1755, quarto.

This contains, as Observation CX, what seems to be the earliest account in English of Appendicitis. The original appeared at Rostock in 1753 under the title "Medicinische, chirurgische und anatomische Wahrnehmungen." See the references given above under Fernel; and Osler Library Catalogue nos. 2925, 2926.

5. Kircher's "Scrutinium Pestis," Rome 1658.

This is apparently the earliest book describing the use of the microscope in investigating the causes of disease. Garrison's invaluable History of Medicine says (4th ed. 1929, p. 252) that Kircher here "not only details seven experiments upon the nature of putrefaction, showing how maggots and other living creatures are developed in decaying matter, but found that the blood of plague patients was filled with a countless brood of 'worms' not perceptible to the naked eye, but to be seen in all putrefying matter through the microscope. While Kircher's 'worms' as Friedrich Loeffler (Vorlesungen über die geschichtliche Entwicklung der Lehre von den Bakterien, Leipzig 1887, pp. 1, 2) claimed, were probably nothing more than pus-cells and rouleaux of red blood-corpuscles, since he could not possibly have seen the *Bacillus pestis* with a 32-power microscope, yet it is quite within the range of possibility for him to have seen the larger microorganisms, and he was undoubtedly the first to state in explicit terms the doctrine of a *contagium animatum* as the cause of infectious disease." . . . Laid in this copy are leaves from Science for Feb. 18, April 1 & 29, and June 3, 1910 containing interesting references to its importance by Dr. Wm. A. Riley and Lt. Col. Garrison, who calls it "one of the acknowledged landmarks in medical progress." The

original vellum binding of the present copy of the book bears handsome ecclesiastical arms which Mr. R. T. Nicoll of the Metropolitan Museum of Art, New York, has kindly identified as those of an Abbot of the once famous Benedictine Abbey of Lambach, Austria, which formerly contained a very large library including very many incunabula. (Mr. Nicoll's manuscript notes are laid in the book.)

6. Lucretius, *De Rerum Natura*, London 1713, Large Paper.

The noble poem of Lucretius gives such a wonderful general view of all Nature and so strikingly anticipates so many modern views that Osler chose it to be the very first item in his "*Bibliotheca Prima*," the first and chief section and feature of his Library.

This neat and useful little edition, including an elaborate index-concordance, was dedicated by its Editor, Michael Maittaire, the learned classical scholar and laborious Bibliographer, to the great physician and famous bookcollector Dr. Richard Mead. If Maittaire were editing it today, he would most probably and most appropriately dedicate it to Dr. Welch! So we take very particular pleasure in presenting this large paper copy, in its handsome original binding, to Dr. Welch personally rather than to the Library, as a slight token of the very highest personal admiration, and affection.

INAUGURATION OF THE DEPARTMENT OF THE HISTORY
OF MEDICINE AT THE JOHNS HOPKINS UNIVERSITY,
BALTIMORE, OCTOBER 18, 1929

The exercises were held in the auditorium of the School of Hygiene.
Dr. Welch presided.

DR. WELCH: We are honored by the presence of our Governor. I suggested that he might say a few words to us, but he declined. I call attention to the distinction which he lends to this occasion by his presence.

A word of explanation is in order. This is, as you know, the second main feature of our dedicatory exercises—yesterday the Library; today the dedication of the Department of the History of Medicine.

I felt embarrassed even to be on the platform yesterday; I hardly feel the same embarrassment today. We are met to celebrate the initiation of a very important undertaking. While we are not justified at present in calling this an institute, we anticipate that it will become—if the resources are provided—an Institute of the History of Medicine. There is in the world today but one Institute of the History of Medicine thoroughly deserving the name, and the one who has organized this great undertaking in Leipzig, initiated under the Puschmann Foundation, we shall have the pleasure of listening to today.

By "institute" something more is meant than mere provision for the professorship. It means a staff devoting their time to the cultivation of their subject, a place where research as well as instruction is carried on, and where provision is made for what is comparable to the laboratory of any science—in this instance, of course, the Library.

Although many of the books needed in an Institute of the History of Medicine are provided in the general collections of a good medical library, it is futile, of course, to expect the general medical library to devote its resources to all of the needed purchases. The Institute,

therefore, should be provided with its own funds, enabling it to expand its departmental library into fields beyond the scope of the ordinary general medical library.

I consider that many medical librarians would be very critical of the collection which I have already started for the Institute of the History of Medicine. I think there is scarcely any subject which, for study of the history of medicine, does not possess significance; the history of medicine requires information on all the conditions of civilization of the particular period under consideration.

How can one grasp its real significance without knowing the state of contemporary knowledge of all departments of science and philosophy? Such a broad background for study and research in medical history necessitates a collection of books embracing all fields of knowledge, and in consequence there should be a budget for the library of the history of medicine, supplementing the budget of the general medical library. I pray that funds for this purpose may be forthcoming.

I can hardly hope to be here longer than for the launching of this Institute, which I consider to be a very significant contribution to medical education and knowledge, and important to medical practitioners as well as to scholars. Study of the history of medicine furnishes the cultural background for medical student and physician; it is the one subject of humanistic study properly falling within the scope of medical learning. The atmosphere of the Institute should be created by a group of men engaged in research, some of which may be very technical and some may lie in the field of literature; it may appear to be research without immediate medical and practical implications. Everything else is easily added if you have a center where serious research is done by those competent to carry it on.

Dr. Cushing, in his admirable address yesterday, gave us an inspiring picture of many of the possibilities of a real institute of medical history. I am most sympathetic with his view that the Institute should serve as a bond of union and a clearing house for diverging medical interests and a center of medical culture. The need for emphasis upon this cultural, humanistic aspect becomes all the greater as medicine becomes more scientific and materialistic.

Medical history is a very broad subject: One of its attractions is

the breadth and variety of the many fields which appeal to different aptitudes and interests. Knowledge of books, everything relating to books, binding, typography, first editions, etc.,—that is one side. I do not minimize the delights of such historic interests as those cultivated by the bibliophile, but for the moment I am endeavoring to bring together rather a collection of works for reference, making really a working library for study and research. For example, I am inclined to think that more valuable to us at present than a collection of incunabula is everything about incunabula. The *Gesamt-Katalog der Wiegendrucke* is more important to us than any single incunable. So, too, encyclopaedias, biographical dictionaries, bibliographies, historical works in all fields of science and knowledge, general and special, are essential.

Perhaps the field which makes the widest appeal to students of medical history is bio-bibliography, as the French call it. This was the especial direction of Osler's interest, whose name will always be associated with the stimulation and development of medical-historical interests in our medical school. Equally interesting is the study of medical history as presented by periods and centuries, especially when connected with the general conditions of thought, knowledge and civilization at the time. It is likewise fascinating to follow the clue of leading fundamental ideas and doctrines—such as vitalism and mechanism—occurring often under different names and disguises throughout the course of medical history. There is likewise opportunity to make valuable contributions in textual, philological and paleographic lines by those trained to conduct such investigations. Interest and piety are combined in the pursuit of local medical history, as illustrated by the valuable contributions to our own local history of Drs. Quinan and Cordell. There is undoubtedly an attractive field only partially explored in the study of prehistoric and early American medicine. These are merely a few illustrations of the many directions which may be followed in the explorations of medical historical fields.

While I do not propose on this occasion to elaborate the thought, I believe that the thesis may be sustained that knowledge and cultivation of medical history not only adds interest to the work of the physician, but also conduces to his influence and ability as a practi-

tioner. Osler and Clifford Allbutt were better doctors, better teachers, more influential in the profession and the community by virtue of their cultivation of medical history, which to them was not merely an added grace and adornment, but was an actual part of their professional equipment.

While the professional historian—the “Fach-historiker”—sometimes looks merely with tolerance, if not contempt, upon the productions of amateurs in the field of medical history, I would urge that historical studies by those who are specialists in other than historical lines and are fully abreast of the existing state of knowledge in their subject may have a significance surpassing that of contributions by the professional historian. Observations and facts, the meaning of which may not be apparent to the professional historian, may be found by the amateur in history, but a master in some other field, full of unsuspected significance. Every encouragement should be given to the pursuit of historical investigations by those whose principal interests may lie in other directions.

But I am not on this program to make an address. My function on this occasion is the more agreeable one of introducing the speakers.

We are extraordinarily fortunate that Mr. Abraham Flexner was persuaded to reconsider his first declination and has responded favorably to our second appeal to speak to us on this occasion. We owe to the General Education Board, of which he was Secretary, the establishment and endowment of the Chair of the History of Medicine. We should probably have neither library nor professorship of medical history to dedicate at this time were it not for the interest and coöperation of Mr. Flexner in our efforts. This is only a part of the great debt which our Medical School owes to Mr. Flexner, who has done more for the advancement of higher medical education in this country than any single individual.

It is a great privilege, and to me a great personal satisfaction and pleasure, to present Mr. Abraham Flexner, late Secretary of the General Education Board.

REMARKS ON THE INAUGURATION OF DR. WILLIAM H.
WELCH AS PROFESSOR OF THE HISTORY OF
MEDICINE

ABRAHAM FLEXNER

Dr. Wilmer's admirable clinic and the Welch Library are notable additions to the resources which this country has accumulated in a very brief period within the field of medicine. The inauguration of a chair of the history of medicine is notable in the same sense and would be notable in any country, except perhaps Germany. But the event we celebrate today possesses other significance and raises other hopes. Let me state very briefly and compactly the considerations that, in my opinion, give this chair peculiar importance at this time.

America is the unpredictable country. A generation ago no one could have foreseen the development which we have witnessed; we cannot today foresee the development of the next generation. Things good and bad have happened. Things good and bad are likely to go on happening. Are we to follow the line of least resistance, or are we to take a hand in determining, as far as we can, the character and quality of American civilization? Feeble as our abilities may be, when pitted against the powerful current of events, I am all for the latter course, for endeavoring by deliberate effort to modify to our liking the character and quality of our civilization. Indeed, universities exist, partly at least, in order that they may influence the direction in which thinking and living move.

I have mentioned universities—our universities. They offer today facilities and opportunities for scholarly and scientific work of the highest quality, such as not even the most sanguine could have predicted a generation ago. They have responded, as was right and sound, to the call and pressure of the age. But they have done something else, something different. They have thoughtlessly and excessively catered to fleeting, transient and immediate demands; they have failed and they are, in my opinion, more and more failing to distinguish between ripples and waves. "The gods approve the

depth and not the tumult of the soul." The American university is becoming more and more tumultuous. I have no time now to document this criticism; but I could, I believe, amply establish it. Our universities have then, I say, increased their genuine facilities and opportunities; they have simultaneously and needlessly cheapened and mechanized themselves. Perhaps the phenomena I have in mind are transient—mere symptoms developed on the way to something better. No one knows; but for our generation they are at any rate serious and disquieting.

This, in general. What about medicine in particular? Progress, solid progress, such as no one could have believed possible has taken place within a single generation. A scientific attitude has asserted itself. A scientific approach to one problem after another has yielded and promises important results—important to health, important in themselves, as all science is fundamentally important in itself and for its own sake, quite apart from its use. The scientific effort in medicine is thus part of the great scientific movement which frees and opens and satisfies the craving and inquisitive human spirit.

But while science has widened our vision and increased our satisfactions, it has its dangers. We can become so infatuated with progress in knowledge and control that we lose our perspective, lose the sense of relative cultural values. I think—speaking as a layman subject to correction—that something like this has happened, or is in danger of happening, to the enthusiastic, clear-headed, forward-looking—perhaps too exclusively forward-looking—and highly specialized young votaries of the medical and other sciences. They sometimes seem to me culturally thin and metallic; their training appears at times almost technological rather than broadly and deeply scientific. They live in tumultuous times, in a tumultuous country, in tumultuous universities. Conquest lures them on, as it should, along this path or that. But, meanwhile, physicians are members of the oldest and richest cultural guild in the civilized world. They owe something to themselves as human beings, something to the traditions and heirlooms of medical history, something to the unity and integrity of medical science. While they are keenly following this scent or that—as, to repeat, they ought—they might yet hear the still small voice that keeps on whispering—"the world is ruled by dead philosophers,"

the truth in which the wisest scientist would be quick to recognize; while they are turning the pages of the latest number of this or that *Zeitschrift*, they might recur from time to time to Milton's words: "A good book is the precious life blood of a master spirit, embalmed and treasured up on purpose to a life beyond life." And it is this life beyond the life of its own day that will be revived and enjoyed and comprehended here as nowhere else at present in this country. The professor who undertakes the task will pull against, not with, the current. But that is precisely why the effort is timely and important.

One point more of a somewhat personal nature: a boy of eighteen, I heard President Gilman in his Commemoration Day address in February 1885 announce that the first step towards the formation of a medical faculty had been taken on the advice of Professor Cohnheim of Breslau and that Dr. William H. Welch would in the autumn assume his duties as professor of pathology. To this day I recall very distinctly the first time I saw Dr. Welch when a few months later he was coming out of the side door of the old building on Howard Street and making his way towards Little Ross Street. Think of his achievements from that day to this! He assembled the great group which, working patiently, quietly, and unobtrusively, placed the Johns Hopkins Medical School upon a standard that was beyond the reach of the general level of American education at that time. Confidence in his wisdom and judgment and in the wisdom and ideals of his associates led to the successive developments of the school and hospital from that day to this. That task practically accomplished, he conceived the plan which was realized in the creation of the unique Johns Hopkins School of Hygiene and Public Health. And now once more in this beautiful library he is privileged, as he deserves, to initiate the first chair of the history of medicine in the United States. It has been a long and glorious career, but it is not yet complete. He holds after all only a professorship. He must guide the expansion of this professorship into an institute which will rank with the institutes of which the rest of the medical school is composed. For several years he has been speaking about retiring, but there can be no retirement for him until he has been enabled to finish the work which he undertakes today, by establishing in this university an institute of the history of medicine, similar to the institute, which Professor Sudhoff so long

directed and with such eminent distinction. I say advisedly in this university, rather than in this medical school; for an institute, devoted to the history of medicine, touches not only the medical faculty but equally the faculties of science, philosophy, and history. It is for their sake as well as for the sake of medicine, it is for the sake of preserving and interpreting the unity of scientific effort that an Institute of the History of Medicine must rise on the basis of the present professorship.

DR. WELCH: Both yesterday and today speakers have mentioned the names of President Gilman, the first president of the University, of Dr. Hurd, the first superintendent of the Hospital, and of Dr. Osler; all of these great lovers of books and keenly interested in the development of our library, as well as in historical studies. These names will be always held in loving remembrance in this place. I should like, on this occasion, also to pay tribute to the memory of Dr. Halsted, who some years ago made serious efforts to secure a new library building and circularized our alumni with the view of securing funds for this purpose.

Many telegrams have been received offering congratulations upon these dedicatory exercises. One of these it is especially fitting that I should read at this moment as a prelude to the introduction of our next speaker, as it comes from the Institute with which his name will always be associated. It reads as follows: "The Institute of Medical History in Leipzig sends heartiest greetings to Dr. Welch, Professor Sudhoff and best wishes for the Institute. Sigerist and Staff."

We are now to listen to one who, by general consent, ranks as the foremost medical historian living in the world today. He has set a model in Leipzig of what an institute of medical history should be. You will find displayed in a large case on the third floor of the Library—a part—not even a major part—of the published works which he has contributed to the history of medicine. Their number and variety will suffice to indicate how hopeless it would be for me to attempt merely to enumerate these contributions.

I count it a great privilege to have had the opportunity of association with Professor Sudhoff in Leipzig, and you will appreciate my good

fortune in persuading him to come to America—on a visit all too brief—to address us on this occasion and to give us his advice and his blessing on our new undertaking.

I have the honor, accompanied with personal delight, to introduce Professor Karl Sudhoff, late professor and director of the Institute of the History of Medicine in Leipzig. His address, at my own suggestion, will be delivered in German, for I feel that his engaging personality will be best manifested when he speaks in his own language.



KARL SUDHOFF, 1929

ADDRESS DELIVERED AT THE INAUGURATION OF THE
DEPARTMENT OF THE HISTORY OF MEDICINE AT THE
JOHNS HOPKINS UNIVERSITY, BALTIMORE, OCTOBER
18, 1929

PROFESSOR KARL SUDHOFF

Director Emeritus of the Institute of the History of Medicine of the University of Leipzig

TRANSLATED BY FIELDING H. GARRISON, M.D.

Honored Guests, Ladies and Gentlemen: The history of medicine is already regarded in some quarters as "a new science." At all events, it has been more extensively cultivated of late years than formerly, and if our festivities of yesterday and to-day were regarded in a certain perspective, it might seem as if we were making a new departure. But it is just the other way around, and I stand here with a vivid impression that, in accepting this invitation I am in the antique by-word Γλαῦκ' Ἀθηναῖζε, taking owls to Athens, or carrying coals to Newcastle, when I speak before the Johns Hopkins University, here in Baltimore, on the history of our profession, its significance and its problems. The solemn opening of the Institute for the History of Medicine at the Johns Hopkins University features the logical term and end of a long developmental process, and it is a matter for joyous congratulation that this festal opening is centered in one of the two men who were the most ardent and successful promoters of medical history within this University, *viz.*, Sir William Osler, the great Canadian clinician, who was privileged to function in this medical school for sixteen fruitful years (1889-1905) and our active Head of the Department of the History of Medicine, Professor William Henry Welch, whom the United States proudly recognizes as one of its foremost leaders in medicine. The way in which these two men employed their stimulating and attractive method of interweaving the historic with the actual in instruction is too well known for me to stress it further. This typical injection of the historic element was vitalized, broadened and deepened by the Historical Club of the Hospital, which has flourished and bloomed for decades. Is it necessary for me to

dwell upon Osler's Silliman Lectures of 1913 (Yale Univ. Press, 1924) as an instance of the success of Osler's attitude toward this matter, a book which has been more effective and influential in the English-speaking profession than many a learned tome from a professional pen? That was in fact an almost revolutionary pioneer-work of this leading modern clinician, a final link in the long chain of valuable historical monographs begun by Osler before he was called to the Oxford chair, a monarch in the realm of medicine in the fullest sense, including the historical. And the golden throne of this exalted position was wrought by himself in the costly years of his clinical activity at the Johns Hopkins, where he found himself as few before or since, particularly in his incomparable activities as teacher, one of the fairest pages in the annals of your hospital. That this historic activity in Baltimore was of far-reaching influence is sensed in the brilliant discourse of yesterday's speaker—Professor Harvey Cushing, whose activities, along the paths blazed by Osler, are not confined to his brilliant Osler biography. After this necessary statement of the just deserts of your school in advancing medical history, which may be taken as a respectable bow to the great old Johns Hopkins Hospital, may I pass over to the history of medicine as a whole, remarking by the way, that in 1905, $4\frac{1}{2}$ years younger than Osler, I was called to Leipzig, as Osler to Oxford, to bring to a focus, at the age of 52, my activities in teaching and investigation, a new chapter in the history of medicine in Germany. In the thick of a flourishing practice, I was called to a newly founded chair, having already accomplished something by the way in the collateral subject I was to promote in Leipzig. This chronologic synopsis may serve, incidentally, to illustrate the status of medical history in the Europe, particularly the Germany, of that day.

In and for itself, the history of medicine is not a new subject. I need only remind you of the *Introductio* of the German Hermann Conring (Helmstedt, 1651), the *Histoire* of the French Swiss Daniel Leclerc (1696) and the two-volume *History of Physic* of his continuator John Freind (1725–6). Even more than a hundred years ago, history of medicine was taught in all the schools and a respectable moiety of the older medical classics was still very much alive. When the chair of History of Medicine was established by the Revolutionary

powers in the *École de Santé* (1794), its incumbent was directed to teach Hippocratic medicine. Littré's admirable bilingual edition of Hippocrates, in 10 volumes, met with cordial approval upon its appearance (1839) and was followed by valuable Parisian editions and translations of the older classics. But the spirit of change was already in the air and, by the middle of the 19th century, the scientific trend of recent medicine was firmly established. In keeping with the great aim in sight, investigation by a rigorous scientific method advanced steadily, from triumph to triumph, through several decades. You all know this glorious period of modern scientific medicine, which so mightily stormed rampart after rampart in the realm of the unknown and in less than half a century put past achievement in the shade. Thus, it became natural that history fell into discredit, when a single peep into a microscope seemed to show more and to teach more than lengthy sessions with the great of old. As a symptom of the process, for example, it is known that, in Germany, one chair of medical history after another died out and was not restored. Only in Vienna was continuity maintained as a matter of course. Romeo Seligmann, after 30 years of activity in teaching (1841-71), was followed by Theodor Puschmann, who was succeeded, after his death, by his most competent pupil, Max Neuburger, who has now completed 25 years of teaching and investigation with fame and honor. But this otherwise complete turning away, one might almost say this break with the past, was not to last long, for here and there were always a few prominent men, who divined, recognized and stood up for the value of a historic sense in medical science. It is a fact of no small historic significance that the best heads of the time, rising above the morass, never entirely repudiated the historic approach and maintained relationship among themselves and with the leaders of the past; extreme misunderstanding and rejection of these things was only a phenomenon of mass action: a thing to be pondered and of which the early awakening of the historic sense at the Johns Hopkins is a considerable phase. Here, too, the leading spirits were better visioned than the great mass of methodical workers, self-satisfied with absorption in the tasks of the day and hour. But, in the end, time passed them by to take up with new aims, new ideas. After a long period of intensive investigation, concentrated upon, if not, indeed, confined

to the collection of an immeasurable wealth of worthwhile facts, there came a sensible interval of reviewing and realignments. The uninterrupted, almost uninterruptible series of analyses suddenly resolved itself into a logical succession of syntheses. People bethought themselves and took account of stock. But this survey of the achievement of the great investigators of the last decade, to whom we owe the most salient advances, led directly to their intellectual ancestors of the preceding century. From comparison with past achievement arose the need of appraisal of the absolute value of the newer men, of their actual greatness, and then the conviction gained ground that the acquisition of new truths, even by experimental method, follows developmental laws which obtain in intellectual, as in organic life, and are indeed of general application to all phenomena. Closer consideration established the fact that the individual modern investigator does not really stand alone in his work but is in close mental relation to his co-workers, a relation as indissoluble as that of the component individual units of a great spiritual organism to the whole. His achievements were, nevertheless, his very own, for they were consciously won through his own intensive work, often by methods thought out by himself, conquests for himself and his science, which he was proud and glad to serve. This extension of the developmental laws of the organic world to the domain of the intellectual was accepted with gratification. It was, however, somewhat embarrassing to admit that just this developmental idea was long ago applied to the organic world by notable protagonists, at least up to the time of Aristotle's great pupil, Theophrastus of Eresos.

Thus, there came, as a matter of course, a revival of interest in the historical approach, which had been thrown overboard as valueless and negligible only a few decades before, like the useless ballast of a ship sailing before favorable winds, and so, as something newly acquired, if not entirely new, it came to be recognized that

"One can think of nothing stupid or wise
Which was not already known to ages gone before."

A commonplace, no doubt, but not entirely valueless and ineffective, in view of the importance attached to inductive method, as something

novel and incomparable, and indeed mostly with justice. But if consolation was derived from the thought that what seemed conquest of induction or experimental observation was, in reality, only results already arrived at, how uncomfortable, astounding, if not irritating, must it have been for the modern scientist to be shown, not merely in isolated cases, that even in fields of investigation of essentially modern type, many observations were made in the past, which might be ticketed and evaluated as methodical re-discoveries, that not only views and doctrines in natural science and medicine recur and experience a joyous new-birth. That this concerns not only minor non-essentials, but things of highest consequence may be evidenced by a single example. The danger of infection which emanated from the phthical to his environment was already known to antiquity. This was recognized anew in the 17th and 18th centuries, and took the form of preventive measures which were made systematic in Italy—a very modern note. Yet these things were again discarded and forgotten in the 19th century until illumination came again by new pathways, with results of most highly successful character. Thus ancient momentous truths acquired new significance and, as new conquests, were soon again in vogue. Further details are superfluous, where we are concerned only with a general viewpoint.

Even in the physician's every-day life, it is sometimes of value to familiarize oneself with the theories, achievements and methods of our predecessors, as increasing our self-confidence with reference to the duties and demands of the hour. Merely to realize the changeable character of medical theories fortifies our independence and capacity to form judgments with reference to new tendencies and the mere opinions of the day. We have our standards of comparison at hand and see that one-sided views of things imply the proper means of correcting not only petty details but general tendencies. But we should not take issue with new findings on account of their novelty. For there is something really new, in the highest degree unique, in the development of science, something not realized before, something singular in every historic phenomenon, in spite of the sterile, almost quietistic *nil novi sub sole*. But deeper penetration will elicit what is typical in the developmental process, in spite of special traits which seem strikingly novel, typical and following a logical developmental

rhythm, which becomes more perceptible when we survey the progress of medicine itself. One feels oneself impelled to draw logical inferences, to look into the possibility of further developments and fascinating details in the process, while beneath lurk the unchangeable laws of human nature and of the biological aspects of popular existence. If the history of ideas and of scientific problems affords, in this manner, something essential for the understanding of our own period, even in the practice of medicine, the same thing is even more apparent with reference to the protagonists of the newer ideas, the individuality of their discoverers and investigators, their peculiar destinies, their experiences in eliciting their findings—something to fortify and even console the research workers of to-day. Let me linger here for a moment, to consider this immense personal element as a moment of energy in the development of medicine, winning larger general views of things. For it is just in the historical development of our profession that we find men of peculiar worth and enduring vitality, who appear first of all on the Hellenic stage. Everything anterior to the Greeks in Asia Minor is but an aspect of collectivism; all great achievement centers in caste; of the individual investigator standing behind his work there is no sign. This is also true of the advanced culture of the land of the Nile. The most personal medical document of ancient Egypt, the Edwin Smith Papyrus, is an American possession in New York, the oldest essential text we are aware of. How strong is the temptation to ascribe it to the deified physician Im-hotep. But the thing cannot be done. The much overlaid text remains as an impersonal preliminary stage of Coan and Cnidian thought. Here I signalize your most considerable possession, perhaps the greatest treasure which has come down to us from the wisdom of our ancestors in antiquity. In the majesty of a land and sea eternally young, in sight of each other lay the unapproachable shrines of medical thought and practice—*Kōs τὸ ἄστυ* and the bustling port of Cnidos, where abode the two great medical leaders, Hippocrates and Euryphon.

“Hippocratic medicine” remains today the highest reach of the healing art and Hippocrates the noblest exemplar of the godlike in the physician. And the Coan-Cnidian aspect of his collective achievement, which, like himself, is still styled “the only,” is even to-day by no means exhausted, as being in many respects inexhaustible.

May we always lead our successors to this ever freshly bubbling spring,
as a source of daily mental fare, as nourishing as it is stimulating—

Κτῆμα ἐς αἰὶ

From this famous medical center in the Ægean, our thoughts wander to the Mediterranean basin, as the cradle of culture for thousands of years and for a long time the stage of the political activities of the peoples on its coasts. Much of its grandeur had faded when it lost its centric position of authority. It fades anew for him who cannot, in his thoughts, cross an ocean, such as encompasses your gigantic country on either side. Oceanic horizons and a civilization encompassed by the Mediterranean Sea! The New World and the Old!

This geographic antithesis may serve as the heuristic principle for study of the historic enclave which is present-day medicine. It may be left to you, who are accustomed to world-embracing perspectives, which extend, at the least, from the Philippines to the state of Maine.

It is no mistake to develop a vast layout for historic investigation, but we must bear in mind that areas yielding positive historic findings in all regions of the civilized globe are to be covered, and here your great country has been already active, in noble emulation with our older Europe, whom you the more surely outpace in culture, the more we exhaust our resources in defensive measures, instead of converting them into cultural values. Historic investigation gets results wherever it buries its spade, and investigation naturally occurs to us again in connection with your fine Institute. More valuable even than cognition is recognition (*Erkenntniss*) of modes of thought in past times, acquired by the historic method, since it reflects, as in a mirror, our own errors and erroneous conclusions, serving as a control to bring before our eyes the lacunæ in our own mental processes. Much, too, can be learned from the conflict of opinions in past times. I need remind you only of the long-drawn battles about William Harvey's discovery, the lengthy disputes about localization of cerebral functions and other problems in physiology and pathology.

Rewarding, too, is the comparative method, which served as a yardstick for critical evaluation of things we are only too prone to overestimate. For this, also, history brings a remedy, by showing that the success of new discoveries is by no means inexhaustible. The relativity of all *Erkenntnisse* is, in fact, almost a commonplace. But

the comparison of phenomena running parallel in the past and the present loses none of its value thereby.

Next in absolute value as a mode of investigation in medical history comes nosology, and not merely in the field which immediately occurs to us, that of the communicable epidemic diseases. We are now in position not only to orient ourselves as to the rise and decline of epidemics by the historic method, but we are seriously concerned with the eradication of human plagues of non-epidemic character. I mention only chlorosis and rickets, which perhaps will soon be part and parcel of history. Again, new types of disease arise, with just claims for recognition at the hands of thoughtful physicians, many of them accompanied by an audible undertone which predicts their absorption into history. Once we have annihilated them we learn, in historic retrospect, that many a disease which scourged humanity has lost its terrors through the common endeavor of physicians and governmental authority. For example, leprosy in the mediæval Occident, a historic chapter full of valuable lessons, which, however attractive, I cannot go into. In general, we can assert with confidence that medico-historic investigation has seldom attained a more secure position than with reference to the past of communicable diseases, following the labors of August Hirsch two generations ago. Newer syntheses are already in the air, due to the great extension of this domain by the work of North American investigators, first, in its extension to the earliest times, as *palæo-pathology*, second, in the illumination and prevention of diseases epidemic in this country, many of which, thanks to your labors, are already coming to be past history.

Epidemiology and history have the closest relations; they are indispensable to each other and this interdependence will continue whenever we succeed in eradicating new diseases, as is well-nigh the case with bubonic plague, cholera and yellow fever, while others, such as typhoid, typhus and dysentery, must still be fiercely combated. A permanent question-mark attaches to pandemic influenza and problems will still arise with regard to such diseases as diphtheria. The armouries of history should thus be held in readiness as important sources of orientation with reference to later invasions and as a supply depot of experience to wipe out any that may recur in future.

In the warfare with folk epidemics, there is a remedy which has

played a particular rôle for centuries, nay for milleniums, namely, the isolation hospital as a bulwark against further infection. That hospitals for healing and care of patients are necessary, goes without saying, but the isolation pavilion, the hospital for incurables will also be necessary and indispensable, if we are to attain the long sought goal of doing away with the segregation of infected patients. The history of these institutions, and of sick-nursing in general, through almost unthinkable periods of time, is not only of vast cultural value, but has an eminent heuristic and pedagogic value for the modern medical profession. Here we are close, perilously close, to the essential problem of all medical endeavor, the sick patient and his helpers, the physicians. Here, again, we perceive how useful the historical approval may be to present day medicine, if it reminds us continually that medicine, rightfully and successfully based upon science, will avail little if we pin our faith too confidently to a vast development along experimental lines. Its total healing function, even with the most refined technique in every specialty, can only be fulfilled when it ever recognizes the paramount importance of the personality of physician and patient, the irrational psychic element along with the rational phases of our noble science, as was already the case with the Coans and the Cnidians, the Dorians and the Ionians, among our medical ancestors in the ancient Hellenic world and through the centuries to our own time. This phase of ancient medicine can still be of incalculable benefit for the tasks of medico-historical teaching which now occupy us, with the possibility of winning new viewpoints of value for the estimation of things historical.

All modes of medico-historical investigation and teaching have a unifying function, with relation to the plenitude of separate disciplines and specialties in modern medicine, each of which tends to go its own way; since to compass its aims implies a certain isolation, its own autonomy in institutes and clinics attached to universities. Not seldom is a single patient led through a whole series of such special institutes, until his condition is ascertained, and the student, the junior in our profession, must not only go through them all, without exception: he must become at home in them, grasp their aim and essentials, learn to master their methods of procedure, know their output. If even the patient runs a certain risk in going through so

many clinical institutes, to the neglect of his total personal status, so, too, the combined faculty of a medical school or university medical department is driven to venture upon a unifying process in the training of the younger adepts in our profession. Each individual discipline has its special introductory lectures, its introduction to classical medicine, to surgery, and so on up to Roentgenology. Do we not need just here a comprehensive introduction to medical science by and large, a perspective of its totality, such as is only possible to the professional historian? Were such a comprehensive survey required of him, the desired, yes, even the necessary widening of the student's horizon beyond the narrow range of his professional education would become accomplished fact. If this holds good for the pupil, the receptor, then for the activator, the preceptor and continuator of investigation, it becomes of elemental importance to cultivate the history of his profession as a matter of course; he must be able to render account of the status of his particular science in the circle of all the sciences, particularly the natural sciences—an orientation only attainable by a comprehensive knowledge of the development of human thought *in toto*.

The historical element in medical teaching will afford to the student a lithe perpetual escape from isolated, one-sided scientific aims, teach him to look beyond a horizon limited by his own specialty into the great wide world of mental activity around and beyond him, to see into the neighboring regions of mental science, of psychology, general philosophy, sociology, and into the general cultural life, the art and literature, of his own time. The physician cannot stand alone within his scientific specialty: as a creature of his time, he must remain in close relation with the general culture of his time; his general training must not expose itself to the risk of being narrower than that in other professions. Culture makes the individual at one with the total development of humanity. If this is to be attained in any appreciable measure, it will turn, not so much upon the amount of knowledge acquired as upon its complete assimilation. Our professional development requires that its component elements should be correlated in our minds as an ever present corrective of one-sidedness in our speciality. The growing tendency to specialization, unavoidable in itself, is inimical to true professional development. The necessary corrective of its dissolving, dissociating effect is the unifying rôle of history.

Where the history of medicine is introduced into the curriculum, it should not burden the student with new matter. No importance should be attached to names and dates; for, in our subject, it is possible to visualize occurrences not understandable by any other process. As the teacher inducts his students into the history of the science and art of medicine from its beginnings, he can show them the various ways and means of appreciating the physician's problems, his relation to the sick and the fundamental aim of aid to the sick. Thoughtful appreciation of all these things is thus afforded the future physician, who has before his mind an oft changing picture of the origins and aims of medicine. To all this, the pupil involuntarily brings something peculiar to himself—moods, aspirations, thoughts, ideals as to his future profession, chosen of his own free will. Even apart from what he clearly perceives, this easily excitable mental stimulus will supplement his scientific experimental training in ideation and thought in a most happy way. He is made aware of the fact that the mechanical-inductive dominant in his training should be set off by something additional, something always to be found in the great periods of medicine, in which observation and experiment with reference to the health and diseased body were pursued in the same serious way. When, at what point in the medical student's course of training, the historical element should be introduced, is of little moment, turning, as it does, upon the personality of the teacher, his relation to his work and his audience, without forcing the issue or without any purposeful attempt to absolve a particular course, which should be postponed to the very end. The history of his profession should none the less occupy the pupil, in this way or that, through the whole curriculum. Even in the introductory lecture, historic surveys and vistas will come up naturally. In the experimental courses much might be made of the lives of the great investigators, with the aim of demonstrating that even they had to struggle manfully to attain the goal and sometimes despaired of it. In the clinical lessons, Auenbrugger, Corvisart, Laennec should become living entities, as also Semmelweis, Pasteur, Lister and some of your own fellow countrymen. A general survey of developments from earliest times, covering a few hours weekly during the year, should be added. It should center in the cultural and spiritual development of mankind, in the rhythm by which this development was accom-

plished, demonstrating the modes of thought in which medical problems were conceived and executed. Here present day medicine brings the whole matter to an advantageous focus for the student audience. Evening hours once weekly in the seminary may serve to make the great of old living beings to the student through their achievement, to reveal things of immortal essence and even to stimulate private reading. In the seminary exercises and courses, discussions upon important special and cultural problems may be held, set off by abstracts prepared in advance by elder and more experienced students, which might be also helpful to graduate students and practising physicians, both in research work and practice. Properly conducted, such an introduction requires a certain critical spirit with reference to novelties of the day in teaching and practice, formation of judgments with reference to our degree of certitude in various fields, cool skepticism toward much which has been taken for granted without challenge as to its nature, origins and validity. The nearer we approach the sources, the less valid will our initial suppositions seem to be. Thus, in the matter of therapy, we should not go so far as to regard the effects of a drug attributed to suggestion as by any means settled; for we shall have already advanced a step in recognizing the limits and possibilities of its potency. Confidence in the physician, faith in the healer, is in fact, a strange thing, and even here the judgments of centuries, like those of today, have fluctuated perceptibly. Appreciation of this fact is not without value. The finest psychologic analyses of today cannot entirely supplant the ultimate verdict of history. Each claims its rights and has its merits. Essential historic studies bring the experiences of earlier times into organic relation with our own, teach us to see our own work in relation to the whole, encourage self-criticism and discourage over-estimation of self. The true spirit of medicine flourishes only through that fusion of past and present upon which it thrives. Without historic perception, the physician lapses into the mechanic. Through it alone, he escapes the harsh verdict of Letamendi: "A physician who knows only medicine, does not even know medicine."

A word more as to research problems of modern medical history and medico-historical institutes. A moment's digression. In circles by no means indifferent or unfavorable to history, on both sides of

the Atlantic, there is a tendency to leave medical history to the dilet-tanti. But whatever may be accomplished by the amateur, for those truly enamoured of the theme such a line is not commendable. For even this historic medical specialty requires method and training, such as can be acquired only by long, serious study and attention to many collateral subjects. For the amateur, success and avoidance of disappointment is conditioned by the guidance of a professional expert alone. He must attach himself to a first class medico-historical research foundation, such as is now readily accessible at the Johns Hopkins. The subtle effect of this leaven is already perceptible in the total medical and medico-historical literature of the United States, which, God knows, is neither slight in quantity nor quality. In the days when medical history was not appreciated by general medicine, she did not fold her hands in morbid inactivity. Not in the least; she labored all the more diligently to perfect herself, maintained her status in spite of all opposition and attained her goal in the face of many difficulties. Not even vexed with our medical Magna Mater, who went her own way along the paths of inductive science, she followed her with warm affection and sympathy, made her theories and methods of investigation her own, and applied them, as far as they were applicable to her own field, thus learning to avoid or dispense with premature deductions, parallelisms, and glittering generalities. In new series of investigations, she has illuminated hitherto unexplored territory by careful inductive weighing of facts, for example, in the medicine of the Middle Ages in the East and the West, in which she was helped out materially by cultural and psychologic findings of general history. In original investigation of the Renaissance and modern periods, her labors were zealous and vigilant. In the classical and pre-classical periods of ancient Asia and Egypt, as well as the tedious excavations of prehistoric archæology, she kept a watchful eye upon the findings of philology and archæology, and gathered, from the great harvests of the last century, sheaves threshed into her own granaries.

Now that medico-historic institutes of scientific type are multiplying and developing, there will be a gradual change. Professional medical historians, methodically trained in serious research work, must, in future, acquire competence in the special fields of Assyrian, Indian

and other branches of Oriental archæology and philology, so that they may ultimately acquire sufficient training to work together with their colleagues in whatever special field up to the point of handling the medical texts of the particular cultural or linguistic domain independently. An impressive array of such special research workers must develop in time.

For your new Institute, the first and most immediate duty will be a young specially trained medical historian to ground himself in the archæology and linguistics of the Incas, Mayas, Aztecs, etc., to become so competent an Americanist that he may partake in the investigation of the vanished medical culture of these peoples in pre-Columbian antiquity, with complete mastery of the field. Here, naturally, we are concerned with an example near at hand. Everything relating to the medicine of the ancient American peoples or of the European or Asiatic immigrants, who for centuries and centuries have been genuine, native Americans, becomes a primary research problem of American medico-historical institutes, in particular at this recently founded example at the Johns Hopkins University and Hospital. Naturally we have not the remotest idea of excluding your Institute from basic investigation of the medical history of the old world, at your pleasure, whether it be Chinese, Malayan, Eurasian, African or European, from palæolithic or Ægean times, through the Cymric, Celtic or Teutonic phases down to the days of Pasteur, Lister, Koch and Ramón y Cajal! May it be the joy and pride of the members of your research foundation to say with the poet:

"My inheritance, how nobly far and wide!
For time is my possession: my seed-field is time!"

and to add a thought of my own, "my work-shop is the entire earth."

Preliminary conditions are at hand: Your American collections and museums possess archæologic and linguistic treasures from all periods, even from the so-called Old World. And here, in the Johns Hopkins University, you have leading representatives of all historic branches in the Faculty of Arts, with whom your Institute must cultivate most intimate relations, as in our old European universities across the water.

Therefore, in your new Institute for the History of Medicine, to which one of your greatest physicians has pledged himself with youth-

ful zeal, to make it as complete and viable as possible for the scientific and professional needs of instruction, investigation and public service, in this new cloister of historical endeavor, you will establish the closest bonds with the totality of the so highly developed American and South American medicine of to-day. That will be not only essential, but, by the same token, of inestimable advantage to your Institute and to general medical teaching at the Johns Hopkins.

You will not forget, at the same time, the study of the history of diseases, in which your territorial domain, extending through every zone, will perhaps encounter special problems conditioned by your geographic status in the seven seas. No matter how one envisages the problem, it is mere illusion that your continent was isolated for long historic periods. Traces of attempted occupation of the North American Continent by the North Asiatic route in pre-Columbian days, in the face of adverse winds and oceanic currents, will now become of liveliest interest to you. But relations with the West, *viâ* the Aleutian Islands, and otherwise by the Pacific route, have a much older cultural significance, probably of epidemiologic nature, since it followed the oceanic currents, of which the Kuro Siwo is only one. Friedrich Ratzel had already expressed this notion when he said that the Pacific Coasts of America were the original Eastern boundaries of the Old World. Thus, not only for centuries but for milleniums, your great country, a connecting link with the two oceanic boundaries of the Old World, has been in many respects an ancient land, if not a correspondingly ancient seat of civilization over wide areas, which will attain, maintain and add to its prominent world-position, even in the domain of science, in which, let us hope, present endeavor will establish another small advance station.

But I must conclude:

Ladies and gentlemen! I have now addressed you on the subject of medical history at great, I fear, inordinate length and yet I have confined myself mostly to a few hints, exhausting nothing except, perhaps, your patience. For that reason I must repress whatever else I have in mind.

In the last analysis, there is still pith in the utterance of the far-seeing Virchow, who, "freed from the galling yoke of time," and like other intellectual leaders of a period indifferent to history, would not

countenance ignoring of things historical, but challenged his period with the lapidary sentence: "All scientific endeavour, even in medicine, is only of historical significance."

But if it be the function of history to "live into the spirit of things past," I should like, in conclusion, to extend this program a little farther for the needs of your Institute. To my mind, it cannot be too many-sided or too multiform, if it is to do justice to every period, even of the future, even for the mental sciences, philosophic and psychological. It must be prepared to appraise all transformations nearing consummation, perhaps, in medicine itself, to illuminate, overthrow or give valid foundations to all new tendencies that may spring up, employing thereto whatever is to the purpose from the treasures of the past. Whether it concern itself with the propounding of new problems, the direction of scientific endeavor, or with new therapeutic methods; may it serve as a guide-post, warning signal and counsellor, in inseparable unity at need, as living history extending its hand to living medicine.

DR. WELCH: Your applause makes it unnecessary for me to make any comments upon Professor Sudhoff's inspiring and helpful address, or even to express, for you have already done so, our grateful appreciation both to him and to Mr. Flexner.

In concluding these exercises, permit me to say that what is dedicated here today, and also yesterday, is not merely a building and a new department; we dedicate ourselves in an endeavor to meet the high hopes of those who have made possible these new and great opportunities for the advancement of medical education and learning.

PROCEEDINGS OF THE CONFERENCE ON THE HISTORY
OF MEDICINE, WELCH MEDICAL LIBRARY, JOHNS
HOPKINS UNIVERSITY, BALTIMORE, MD.,
OCTOBER 18, 1929

The exercises were held in the auditorium of the School of Hygiene,
615 North Wolfe Street. Dr. Harvey Cushing presided.

ON THE ORIGINAL CONNECTION BETWEEN MEDICINE
AND THE UNIVERSITY

STEPHEN D'IRSA

In our days teaching and study of medicine are both so deeply entrenched within the organization of the university that we are apt to consider this fact—that medicine belongs organically to the *universitas litterarum*—as self-explanatory. It is self-explanatory as long as we remember the tremendous tradition behind the system. Our universities, much as they have changed their ambitions and their programmes with the changing times, are still, at least as regards their frame, the direct heirs of the great universities of the Middle Ages. The Middle Ages have created the university; they are accordingly responsible for the position of medicine within the university's scope. It was the mediaeval era that anchored medicine firmly to the university and has thus formed forever the position that medicine occupies in the intellectual life of modern society. It is worth while, I think, to point out briefly the origin of this association and to investigate the motives which might explain it.

Let us consider first that the Middle Ages were not quite so averse to the world as it is readily thought; they did not profess a belief in *l'art pour l'art*. John of Salisbury, who stood at the cradle of the great University of Paris, having studied on the Montagne Ste. Geneviève around the middle of the XIIth century, avers that "science prepares the readiest path to everything—*expeditissimam ad omnia viam parat*." The sciences, among them medicine, aimed not only to provide an adequate general education, they also had definite

practical aims, established already by the Fathers. These practical aims were fostered by the physical circumstances. Salerno and Montpellier were places of a secure material civilization. They were frontier places, and they were rich. This emphasized the importance of a discipline which brought material advantages to its followers; not any less than Theology or the Law. The magnificent organization of these latter studies in Paris and Bologna can be explained only because we know of the heavy demand for trained men in these professions. In Salerno and Montpellier the case of medicine is similar. It is again John of Salisbury who tells us how people got tired of the course in arts, a course which received no fulfilment in the way of some practical activity; and how these people migrated to Montpellier to get exactly this fulfilment. As times advance one can perceive the decreasing study of Grammar, Dialectics and the other Arts for their own sakes. Everything tends from the undergraduate toward the graduate study which is the entrance to active life.

Finally, the students and the active practitioners of Montpellier formed a corporation, *Universitas medicorum tam doctorum quam discipulorum*, in a definite form between 1220 and 1240, the initial decades of the modern medical school. Corporate life was further strengthened by the foundation of medical colleges, such as the Collège de Mende ou des douze médecins (1369), founded by Pope Urbanus V, providing for the increase of the student and master body. Others followed rapidly, e. g., *Collège de Boel*, *Collège du Vergier*. Accordingly, the University of Montpellier became a corporation of students and practitioners of medicine—we disregard now the other disciplines—calling itself in a Rotulus: addressed to the Pope: your devout daughter, the university of physicians, *devota filia universitas medicorum*. This university was a corporation which grew out of the daily needs and desires of the composing scholars; embodying their ambitions and the purposes of their lives. This corporative conception continues even now in the eminently clinical-practical garb of the French university—in our terminology, faculty. It was the stimulus of professional life which helped to organize medicine in the university.

But Medicine had also certain purely intellectual foundations which urged it on into the company of the received arts and sciences. To use another set of terms so dear to the Middle Ages: the practical activity,

the need of a fulfilment of study was the final cause; the intellectual foundations, however, were the efficient cause of medicine's being in the university, or rather being a university. St. Isidore of Seville, who summarizes the educational and cultural views of the early mediaeval era, assigns to medicine the task of continuing the work of the liberal arts. *Illae singulares continent causas, ista vero omnium.* They (the arts) contain particular causes, processes, she, however, (medicine) contains all. Grammar will enable the physician to understand and explain that which he has read; Dialectics permit him to approach diseases with reason; Rhetorics allow him to test the truth of proofs; through Arithmetics and Geometry he will be able to diagnose the qualities of places and certain days; through Astronomy to watch the influences of time on the bodies; through Music to do better therapy. "It is thus that medicine is said to be second philosophy. Both disciplines require the whole man. For the one heals the soul, and the other the body." In other words: mediaeval man conceived of medicine as a means whereby to integrate his knowledge of the outside world, to approach thus the ideal of education—which was the ideal of the well rounded and clearly informed person—and finally, whereby to be able to work actively and usefully. The ideal of mediaeval education required an integration, as perfect and as systematic as possible. This comes out very clearly in reading Boethius. Boethius' classification of philosophy (meaning, of course, science, systematic knowledge) was alive until nearly the end of the Middle Ages. It lasted for more than eight centuries. And what was this classification? that science is composed of Theory (Theology, Mathematics and Physics—Regions and Categories of human knowledge and thought), of Practice (which is Ethics, Deontology) and Logic. Foundation of all is the liberal arts course. The classification is adopted by Hugh of St. Victor; he and his fellow Victorines stand at the source of the University of Paris. Accordingly, the educational ideal of the early Middle Ages automatically becomes the educational ideal of this great university, mother of all others. John of Malignes, in a Responsion, dated 1283, uses characteristic metaphors: the corporation of students and masters is the source whence issue the rivers representing the faculties (as we here would say, the schools), and the noble river of the medical faculty signifies the union of the incorruptible

intellect with the corruptible body. *Ista medicorum facultas nobilis est rivulus, quia cum ejus aqua quis potatur, mirabilis unio, puta sue intellective incorruptibilis cum corruptibili corpore, conservatur diutius, potu illo suo egrotanti corpori medicamina tribuendo.* Very clearly appears here the unity and purposefulness of medical knowledge, purposive, useful and at the same time covering the ideal to systematize and to be complete. One can follow up the way of this systematization through each one of the sciences making up the arts course. Take, for example, Mathematics. St. Isidore emphasizes the connection of mathematical knowledge with medical activity. Six hundred years later Cecco d'Ascoli who lived in Bologna in Dante's times makes this statement: (couched in strange alchemical terms) 'The physician without astrology is an eye which has no potency to work:' *medicus sine astrologia est quasi oculus, qui non est in potentia ad operationem.* This goes to show that the same ancient educational and professional ideal, corresponding to public opinion—embodied in the clergy—has been definitely established in the great universities.

The direct connection between the liberal arts course and medical education, and the reason for it, is obvious. I have already mentioned certain component parts of the Trivium and the Quadrivium in the curriculum of the faculty of arts—as it was called at a later date, such as arithmetics, geometry, astronomy. In Italian universities the connection between rhetorics and the post-arts (the graduate) faculties—not only the law faculty, well understood—may be equally traced. In Bologna Rhetoric became the foundation of the Jurist-university and later also of the medical university; and it was exactly this connection, this special design of the propedeutic course which made medical students to a certain degree dependent on the preparatory education specially designed for jurists; it was exactly this connection that made the corporation of the medical students dependent on the corporation of the jurists both legally and socially. But the preparatory course is not to be identified with the medical course itself. Faculties of Arts issue everywhere from cathedral and monastic schools. Not so the medical faculties. Since the Councils of Lyons restrain monks from the study of medicine, and Honorius II restrains even the secular clergy, phenomena, like certain Canons of Cologne in the later Middle Ages who were medical graduates, are

very great exceptions. The Mont Ste. Geneviève never was the beginning of the Parisian faculty of medicine. During the vigorous days from Abelard to John of Salisbury there has not been a single teacher of medicine on the mount. During the 13th century when the Masters of Mont Ste. Geneviève and of the Ile de la Cité, or rather the Petit Pont, have already formed their university corporation, have formed the original faculty of arts, the faculty of medicine was still *in statu nascendi*; it crystallized gradually out of the group of teachers and practitioners working at the Hôtel Dieu and St. Julien le Pauvre. The early history of the University of Paris into which John of Salisbury, Girald of Cambrai and others allow us to have a glimpse, does not reveal completely this consolidation. Such connections—*e.g.*, the one between the Hôtel Dieu and the faculty—were rather hidden and inward ones, so to speak, corresponding to the educational requirements of the age; but their purposes were purely practical. Many a decade will pass before medicine gets so far incorporated within the *universitas magistrorum* that the acts and deeds of the faculties (*facta facultatum*), thus also those of the faculty of medicine, become deeds of the university (*facta universitatis*) which happened in 1281.

During the XIIIth century further changes affect the original scholastic democracy, it acquiring a definite public character. William, Count of Montpellier, still expresses and protects in 1180 the primitive scholastic democratic ideal: complete equality among the masters when teaching and ruling their School. *Mando, volo, laudo atque concedo in perpetuum, quod omnes homines quicumque sint vel undecumque sint, sine aliqua interpellatione regant scholas de fisica in Montepessulano.* Significant change within a century; in 1309 Pope Clement V regulates in great detail the curriculum and with it the rights and privileges of the medical faculty. It is not any more the free and private association of all comers, but a privileged and responsible body charged with public duties. This is what the increasing privileges mean—from legal charter and recognition down or up to financial support, (such as was given to Montpellier by Charles VIII and Louis XII): a steady advance in the recognition of the public character and public significance of medical education. Very similar is the development in Bologna, and of this development Thaddaeus of Florence, who by tying medicine intimately up with the arts course

created its faculty position, was the first stage. We read this very definitely in the documents of the university of Bologna: *Haec potissima Thaddaei laus fuit quod primus ex nostris medicinam cum philosophia arctissimo fodere conjunxisse visus sit*: it is the eternal glory of Thaddaeus that he joined medicine to philosophy in strong union, always remembering, of course, that philosophy is not used in our modern technical sense, but means science and organized knowledge in general. In 1292 we have in Bologna a college of the corporate doctors of medicine, and the independence of the evolving medical faculty becomes definite in 1306 with the appointment of an independent medical rector. Although the medical school was already in those days, from its very inception, a professional school, the connection with a structure of general education was a very intimate one. The function of the faculty was teaching and learning simultaneously, *docendo discebant*. This was the keynote of the old medical faculty, a keynote derived from the conception of the university, in whose frame the faculty was now comfortably sheltered. The French and English medical faculties have long retained this keynote.

Research became, at a much later date, the keynote of the German and the Scandinavian university, *resp.*, medical faculty; just like teaching and study, research too grew out of the very structure of the university, it grew out of the increasing requirements of the teaching principle. Research became just as integral a part of medicine as teaching in its original form, and both became integral parts of the university. When discussing the requirements of the newly to be established University of Berlin in 1810, Humboldt cannot think of any other place for scientific medicine but the university. This attitude was laid down in germ in the very mediaeval university itself. That research not less than teaching has been and is being regarded as a university task, is a great proof for the elasticity of the original university idea and its great future possibilities.

JOHN CONRAD OTTO AND THE RECOGNITION OF HEMOPHILIA

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In Isaac Parrish's laudatory Biographical Memoir (1) (1845) of J. C. Otto, occurs the statement: "As a writer, Dr. Otto is but little known. Like many of the most experienced physicians of the United States, whose opportunities for observation, combined with a sound judgment, would give weight and importance to their statements, he has contributed but slightly to the medical literature of the country." Henry (2), too, paraphrasing Horace, speaks of him as "Parcus literarum cultor et infrequens." And yet thirty years later, Immermann (3), writing in Ziemssen's great Handbuch, at a time when American medical achievements were not especially well known or appreciated, speaks of Otto's "epochemachenden Aufsatz" as inaugurating a series of American studies (Coxe and Smith, Hay, Buel, and others), which for the first time permitted an orderly presentation of the disease Hemophilia and its manifestations.

Can we evaluate Otto's contribution?

Unexpected severe bleeding, even to a fatal issue, had unquestionably been observed sporadically for centuries. For instance, such knowledge may be inferred from the provision in the Talmud (4) (about 200 A.D.) which forbids circumcision of a child where the operation has proved fatal successively in two brothers of the same family ("If a woman has her first boy cut and he dies, and again a second, then shall she not have the third one cut;" and "if two children of the same mother or a child each of two sisters die in succession as the result of circumcision, then it shall not be performed on the third child.")

Albucasis,¹ too, at least had heard of fatal bleeding from trivial

¹ The Arabian Abulkasim Khlaf Ebn Abbas al Zahrewi or Alsaharavi, died at Cordova about 1107.

wounds, as is shown in the following Latin translation of an abstract from his work said to be by Paulus Ricius.²

"De passione fluxus sanguinis a quocunque locorum.

"Vidi in quibusdam regionibus casale quoddam, dictum 'al-kiria,' viros, qui narraverunt mihi, quoniam, cum accidit in corporibus ipsorum vulnus aliquod magnum, indesinenter fluit sanguis ex vulnere, quousque moritur. Et recitaverunt mihi super hoc, quod quibusdam ex pueris suis, cum fricaret manu gingivas, cepit sanguis fluere ex illis, donec mortuus sit. Alius vero, flebotomatus a minutore sanguinis, non ceasavit ex eo fluere, donec periit. Et universaliter eorum mors, ut in pluribus, contigit in hunc modum. Haec est res, quam nunquam et nusquam vidi, nisi in casale praedicto, nec reperi hoc accidens ab aliquo antiquorum memorantium, nec scio ejus causam, et, quod mihi videtur de curatione ejus, est, quod ille, cui hoc accidit, celeriter cauterizet locum, donec sanguis restringatur, et ego minime probavi hoc, et est apud me monstrum." (5)

(Translated) "Concerning the disease manifested by a flow of blood.

"In a certain region I saw in a certain cottage (hamlet) called Alkiria, men who told me that when any large wound is made in their body, the blood flows from that wound without ceasing up to the point that the person dies. They told me in addition, when in the case of one of their boys, one of them rubbed his gums with his hand, the blood began to flow from them until he died.

"Another man who had his veins opened by one who lets blood, did not cease to have a flow of blood until he died. And speaking generally, the death, of the people there, happens in this way and this is something that I have never seen anywhere except in the place mentioned. Nor have I found a case of this among any of the ancient writers and I do not know the reason for it (the disease). And, as for what seems to be best for curing it, the man to whom it happens quickly cauterizes the place until the blood is checked. I by no means proved this, and it is in my opinion an extraordinary thing." (This is a free translation of the wretched Latin, kindly made by Professor McDaniel of this University.)

The cauterization that he suggests is still recommended as a form of treatment.

Four centuries later we read in Benedictus (6) of a Venetian barber who, while clipping hairs at the end of his nose, accidentally punctured the skin with the point of the scissors and died from the hemorrhage thus produced:

"Venetiis tonsor quidam, cum in naribus pilos incommodos forcipe concideret, venulam incaute secuit, tantoque impetu sanguis erupit, ut sistendi modum medici plurimi non adinvenirent, et ille misere vitam finivit."

² Legge says that this translation was really by Sigismund Grim. Search in the Bodleian failed to reveal the Arabic manuscript Al-Tasrif.

While doubtless a case of hemophilia, such meagre details of a single unconstructive observation obviously have no great historical significance, though they may afford satisfaction to the curious searcher.

Somewhat more complete is Philip Hochstetter's (7) observation in 1635 of a boy who throughout life had severe hemorrhages on slight occasion (from the navel after birth, repeated nosebleeds, at least one bloody stool, and spontaneous ecchymoses):

"Nati modo sanguinem fundens largius umbilicus et adulti ad haemorrhagiam prona nares cum sugillatione.

"Puer quidam sanguinem ob non rite ligatum umbilicum recens natus copiosum fudit: mater remotis fasciis infantem commaculatum videns, perterrita in febrem et phrenesin incidens vitam morti cessit; puer non deterius habens; haemorrhagiae narium dum adolescit maxime fit obnoxius; aetatis nono copiosa fuit, ut adstantibus terrori esset. Ideoque adhibitis refrigerantibus et sanguinem sistentibus medicinis, narium stilla desiit, et feces cum sanguine fluenti et concreto prodire mixtae, sugillataque seu maculae sanguineae rubrae, post caeruleae per cutim passim effloruere, in facie, pectore, dorso, artubus, quae tandem flavae factae disparuere. Sequentibus annis, cum similis haemorrhagia ac sugillatio adessent, sequebatur scabies: quae dum curabatur mundantibus sanguinem et purgantibus corpus, promovetur haemorrhagia. Quare undecimo anno aetatis venam adperui commode, teneram haud metuens aetatem."

The Philosophical Transactions (8) furnish us with some doubtful cases that have been evaluated by Legge. Let us accept his conclusions that the du Gard (Lowthorp, Coxe), Havers, Ash and Musgrave cases are hardly cases of true hemophilia. More pertinent, however, is Banyer's (9) case, which Legge transcribes in full, but even this is not beyond criticism: A gardener, at the age of 24, experienced his first severe hemorrhage, following incision of an infected wound of the foot. For the next nine years he suffered numerous hemorrhages from the nose, kidneys and intestines, until he died in convulsions following another leg wound.

It will be noticed that these are all isolated observations, impossible to separate from the various hemorrhagic diseases now known to exist and without significance in furthering knowledge of true hemophilia. Fordyce's (10) account of a Northamptonshire family, who suffered from repeated hemorrhages, has been quoted by some (who could hardly have seen the original) as the first real description, but even this

must be relegated to a still lower category than some already mentioned, both on account of the paucity of the description and the nature of the familial distribution (father, daughter and sons). The complete observation follows:

"Quidam Laston apud Duddington in comitatu Northamptoniensi, sanguis fere quotidie per nares erupit. Eo nati omnes similiter dolebant; filiaque ejus a majore proxima, eodem affectu extenuata, diem suum obiit. Hujus modi raro dantur exempla."

One or two vague references have been found to an observation in the *Medicinische Ephemeriden* of Chemnitz in 1793, but the rarity of the journal has apparently hitherto prevented its being consulted. I was fortunate enough to find it, however, in the Surgeon General's Library and it proves to contain one of the best 18th century accounts of hemophilia. The book, published by Karl Gottlieb Hofmann, is largely devoted to an account of the medical topography of the Graffschaft Ravensberg; but also contains a number of isolated, unrelated, case reports. The author's name is not given, though "ich" appears frequently throughout. Mr. Toepper, Assistant Librarian of the Surgeon General's Library, has kindly worked out for me that the author was Georg Wilhelm Christoph Consbruch, a writer of several other medical books, who has not, however, attained the distinction of inclusion in Garrison's or other standard histories.

The report appears on Page 267 and is the last one in the book. It reads as follows:

"Und nun noch eine merkwürdige Geschichte: Am 4ten November wurde ich über Land zu einem 11-jährigen Knaben geholt, der sich vor 2 Tagen leicht in den Daumen geschnitten hatte, und, ohne dass man durch alle mögliche Mittel im Stande war, das Blut zu hemmen, schon ehe ich zur Stelle kam, sich todt geblutet hatte. Ein Bruder dieses Knabens hatte sich vor mehrern Jahren ebenfalls an einer leichten Wunde todt geblutet, und mehrere Brüder der Mutter waren gleichfalls bey sehr geringen Wunden auf eben diese Art gestorben. Alle weibliche Personen in dieser Familie sind, soviel ich weis, von dieser traurigen Idiosynkrasie frey. Die Geschwister und Kinder der Mutter, so wie die Mutter selbst, haben eine sehr feine weisse Haut, stark durchscheinende Blutgefässe und rabenschwarzes Haar. Die Frauenzimmer menstruiren ordentlich, und sind völlig gesund, Die Mannspersonen sind zu Nasenbluten geneigt, welches dann leicht übermassig wird, und ihnen allemal Todesschrecken einjagt. In der That ein sonderbarer für die Physiologie und Pathologie sehr interessanter Umstand, den ich mir noch nicht recht deutlich erklären kann!"

(Translated) "And now still another remarkable history: On the fourth of November I was called into the country to see an 11 year old boy, who 2 days before had cut his thumb slightly, and without being able to stop the flow of blood by any means, bled to death before I could reach the spot. A brother of this boy several years before had likewise bled to death from a slight wound; and several



PORTRAIT OF J. C. OTTO, FROM A LITHOGRAPH IN THE LIBRARY OF THE COLLEGE OF PHYSICIANS, PHILADELPHIA

The date of birth is incorrectly given as 1775. A miniature, probably the original of the above and identical in appearance, is now in the possession of Mr. Otto T. Mallery.

brothers of the mother had died in the same way from slight wounds. All of the female sex in this family are, as far as I know, free from this unfortunate idiosyncrasy. The brothers and sisters and children of the mother, like the mother herself, all have a very thin white skin, with the blood vessels appearing clearly through it, and have raven black hair. The women menstruate normally and are entirely healthy. The men of the family are inclined to have nosebleeds, which

easily become inordinately severe and always fill them with the fear of death. Indeed a 'wonderful circumstance most interesting for physiology and pathology, and one which I cannot yet properly explain!'

Thus there is no doubt here but that the condition was really hemophilia and that its fatal nature was recognized, together with its familial nature and limitation to the male sex. Probably the relative unimportance of the journal and the obscure form in which the communication was made are sufficient to account for the oblivion that enveloped it.

When we come to Otto's description (11), written in his 29th year, all of the salient features of the condition (except the responsible deficiency in the blood) are so clearly portrayed that the disease stands fully clothed before us. Also, as will be noted below, it was Otto's contribution that led directly to the recognition of the disease throughout the civilized world:

"An Account of an Hemorrhagic Disposition existing in certain Families. By John C. Otto, M.D., of Philadelphia.

"About seventy or eighty years ago, a woman by the name of Smith, settled in the vicinity of Plymouth, New Hampshire, and transmitted the following idiosyncrasy to her descendants. It is one, she observed, to which her family is unfortunately subject, and had been the source not only of great solicitude, but frequently the cause of death. If the least scratch is made on the skin of some of them, as mortal a hemorrhagy will eventually ensue as if the largest wound is inflicted. The divided parts, in some instances, have had the appearance of uniting, and have shown a kind disposition to heal; and, in others, cicatrization has almost been perfect, when, generally about a week from the injury, an hemorrhagy takes place from the whole surface of the wound, and continues several days, and is then succeeded by effusions of serous fluid; the strength and spirits of the person become rapidly prostrate; the countenance assumes a pale and ghastly appearance; the pulse loses its force, and is increased in frequency; and death, from mere debility, then soon closes the scene. Dr. Rogers attended a lad, who had a slight cut on his foot, whose pulse 'was full and frequent' in the commencement of the complaint, and whose blood 'seemed to be in a high state of effervescence.' So assured are the members of this family of the terrible consequences of the least wound, that they will not suffer themselves to be bled on any consideration, having lost a relation by not being able to stop the discharge occasioned by this operation.

"Various remedies have been employed to restrain the hemorrhages; the bark, astringents used topically and internally, strong styptics, opiates, and, in fact, all those means that experience has found serviceable, have been tried in vain. Physicians of acknowledged merit have been consulted, but have not been able to

AN
INAUGURAL ESSAY
ON
EPILEPSY,
SUBMITTED TO THE EXAMINATION OF THE
REV. JOHN EWING, S. T. P. Provost;
THE
TRUSTEES AND MEDICAL FACULTY
OF THE
UNIVERSITY OF PENNSYLVANIA,
On the 17th day of May, 1796.
FOR THE DEGREE OF DOCTOR OF MEDICINE.

By John C. Otto, A. M.
Member of the Medical and Chemical Societies of Philadelphia.

PHILADELPHIA,
PRINTED BY LANG & USTICK,
M.DCC.XCVI.

TITLE PAGE OF OTTO'S INAUGURAL ESSAY AT THE UNIVERSITY OF
PENNSYLVANIA, 1796

direct any thing of utility. Those families that are subject to certain complaints are occasionally relieved by medicines that are inefficacious when applied to others; and family receipts are often of greater advantage in restoring them, than all the drugs the *materia medica* offers for that purpose. A few years since the sulphate of soda was accidentally found to be completely curative of the hemorrhages I have described. An ordinary purging dose, administered two or three days in succession, generally stops them; and, by a more frequent repetition, is certain of producing this effect. The cases in which the most powerful, and apparently the most appropriate remedies have been used in vain, and those in which this mode of treatment has been attended with success, are so numerous, that no doubt can exist of the efficacy of this prescription. The persons who are subject to this hemorrhagic idiosyncrasy, speak of it with the greatest confidence. Deceptions may take place from accidental coincidence; but when a complaint has often occurred, and been almost uniformly fatal without the administration of a certain medicine, and has constantly yielded when it has been given, scepticism should be silent with regard to its utility. Nor should our inability to account for the fact, upon the theory and principles we have adopted, be conceived a sufficient reason for disbelieving it. An attempt to explain the mode of operation of this valuable remedy might give birth to much speculation. As the affection has been attended with mortality, and there is generally a disposition to give relief as early as possible, experiments have not been made with the other neutral salts to learn their comparative effect; nor have medicines been tried, whose operation might be supposed to be similar. The prescription being known to the whole family, application is rarely made to a physician; and when it is, it is rather with a view of directing him how to proceed, than of permitting him to make a series of trials and observations which might be at the hazard of the life of the patient. The utility of the sulphate of soda cannot arise from its debilitating effects, since it has been found serviceable when the previous depletion has been great, the strength much exhausted, and the system has evidenced symptoms of direct debility. Perhaps time will elucidate its mode of operation, and some general principles may be developed that may be applied to advantage in restraining ordinary hemorrhages; but reasoning upon what has been discovered to be useful in idiosyncrasies, and applying it to the general constitution of human nature, must necessarily be vague, and productive of occasional evil. In every case, however, a doubtful remedy is preferable to leaving the patient to his fate. The sulphate of soda has constantly succeeded when administered; but the prescription being in the possession of the Shepard family, the descendants of Smith, and the cases that have been attended by physicians not being very numerous, it is impossible to ascertain the various states of the system in which it has been given, or to form any correct conclusions respecting its manner of acting. No experiments have been made on the blood, to discover if any or what changes take place in it.

"It is a surprising circumstance that the males only are subject to this strange affection, and that all of them are not liable to it. Some persons, who are curious, suppose they can distinguish the bleeders (for this is the name given to them) even

in infancy; but as yet the characteristic marks are not ascertained sufficiently definite. Although the females are exempt, they are still capable of transmitting it to their male children, as is evidenced by its introduction, and other instances, an account of which I have received from the Hon. Judge Livermore, who was polite enough to communicate to me many particulars upon this subject. This fact is confirmed by Drs. Rogers and Porter, gentlemen of character residing in the neighbourhood, to whom I am indebted for some information upon this curious disposition. When the cases shall become more numerous, it may perhaps be found that the female sex is not entirely exempt; but, as far as my knowledge extends, there has not been an instance of their being attacked.

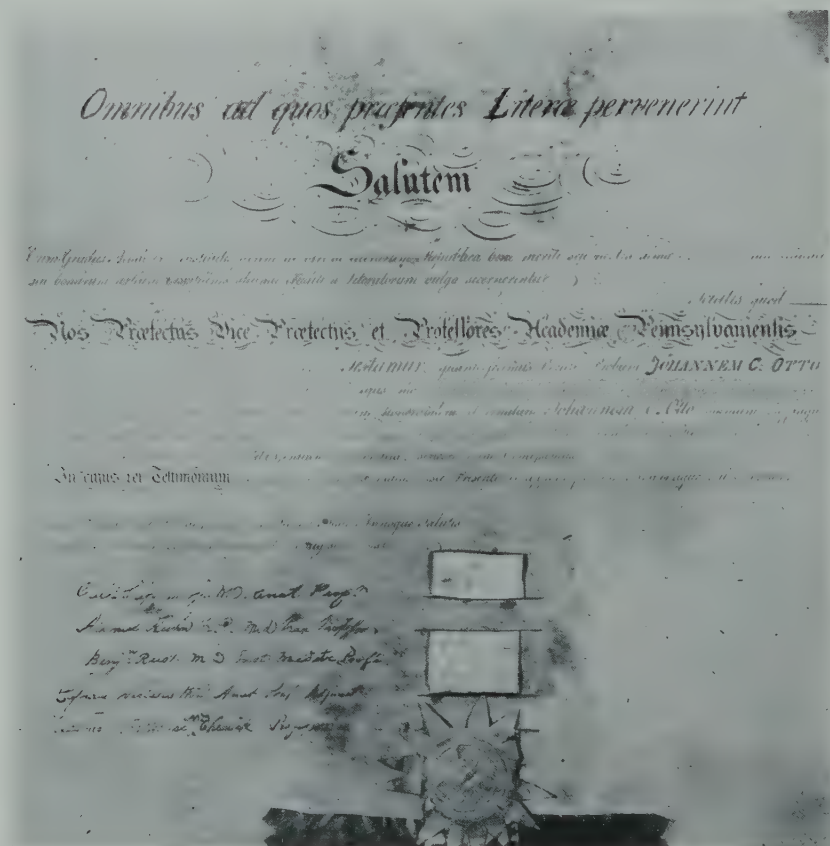
"The persons subject to this hemorrhagic disposition are remarkably healthy, and, when indisposed, they do not differ in their complaints, except in this particular, from their neighbours. No age is exempt, nor does any one appear to be particularly liable to it. The situation of their residence is not favourable to scorbutic affections or disease in general. They live, like the inhabitants of the country, upon solid and nutritious food, and when arrived to manhood, are athletic, of florid complexions, and extremely irascible.

"Dr. Rush has informed me, he has been consulted twice in the course of his practice upon this disease: The first time, by a family in York, and the second, by one in Northampton county, in this State. He likewise favoured me with the following account, which he received some years since from Mr. Boardley, of a family in Maryland, afflicted with this idiosyncrasy.

"A. B. of the State of Maryland, has had six children, four of whom have died of a loss of blood from the most trifling scratches or bruises. A small pebble fell on the nail of a fore-finger of the last of them, when at play, being a year or two old; in a short time, the blood issued from the end of that finger, until he bled to death. The physicians could not stop the bleeding. Two of the brothers, still living, are going in the same way; they bleed greatly upon the slightest scratch, and the father looks every day for an accident that will destroy them. Their surviving sister shows not the least disposition to that threatening disorder, although scratched and wounded. The father gave me this account two days since, but I was not inquisitive enough for particulars."

Thus we note the essential feature of transmission in one family (Smith-Shepard) over a period of at least 70 or 80 years; also (Par. 3) "that the males only are subject . . . and that all of them are not liable," and "although the females are exempt, they are still capable of transmitting it to their male children." The only subsequent items of importance to be added were: the name "Hemophilia," none too good a one at that, which is supposed to have been first used by Schönlein in his *Vorlesungen* in 1828; and the demonstration that the hemorrhages were due to an impaired coagulability of the blood, as

shown by delay in the coagulation time. This is said to have been first observed by J. H. Wright (12) in 1894. What causes the change in coagulability is as yet unknown and the attempts to link it with qualitative changes in the blood platelets or a chemical alteration in the blood vessel walls thus far continue to be mere hypotheses.



OTTO'S UNIVERSITY OF PENNSYLVANIA DIPLOMA, SIGNED BY THE 5 PROFESSORS BUT NOT BY THE PROVOST OR VICE-PROVOST

The stress laid by Otto upon the efficacy of sodium sulphate *per os* in treatment is another noteworthy point. Not only is it difficult to see how this could have been "completely curative" (in Otto's words) in the light of our present knowledge, but also it seems to have quickly fallen into disuse, other than as a desirable depleting purgative.

Two years later, Otto (13) published another paper on the same subject, giving the history of the Binney family of Maryland with details of four fatal cases. His original paper was considered by the English worth transcribing in full five years later in the *Medical and Physical Journal* (1808, 69). He can hardly be considered the discoverer of the condition, even in this country—he himself calling attention to the lay use of the term “bleeders” and the observations of Drs. Rogers and Porter and Benjamin Rush on the subject—the latter being for once “not inquisitive enough for particulars.” However, I think, we may fairly enough consider Otto, what is more important, the first recognizer and adequate describer of the condition and the one who first fixed the attention of the medical world upon it.

Other American observers were prompt to confirm and enlarge upon these observations. Hay’s (14) description of the Appleton-Swain family is the most complete and extensive of any of the earlier cases: a score of individuals extending over three generations are described and a relationship between the Appleton and Otto’s Smith family suggested. Buel (15) and Hughes (16) added more cases, while the article by Reynell Coates (17) presented the most thorough early American treatment of the subject. In 1820, Nasse (18) made a complete résumé of the existing knowledge of the subject, giving due credit to the American contributions, while Schönlein’s inclusion of hemophilia in his celebrated textbook insured its status in medical literature. By 1883, Osler (19) listed fourteen American articles on the subject, while German contributions were frequent.

It would seem clear then, that to Otto belongs the distinction of having first adequately recognized and described hemophilia and so brought it to the attention of the medical world that it at once took its position as a separate and important disease. This in itself is a sufficiently creditable performance, but becomes especially so when we consider the state of scientific medicine in this country at the opening of the 19th century. But four medical schools existed for the instruction of physicians, the great majority of whom still got their training as apprentices to older men. Yellow fever, to be sure, was known from bitter experience, and considerably written about—though mostly far wide of the mark—but other noteworthy contributions were few indeed. According to Billings: “At the commencement of the Revolu-

tionary War, we had one medical book by an American author, three reprints and about twenty pamphlets" and for the next quarter century (excluding yellow fever) there is even less to record. Rush's Medical Observations and Inquiries were and are still well known (dengue, thermal fever, general effects of alcoholic excesses, of extraction of teeth, of arsenic in cancer and so on). The genius of a layman, Benjamin Franklin, found time from his manifold public and philanthropic duties to invent bifocal lenses in 1785 and the earliest American surgical achievements were taking place (*e.g.*, Wright Post's ligature of the femoral artery, 1796). It was not till well after Otto's hemophilia publications, however, that American surgery made its real contributions, in the persons of Physick, the Warrens, Valentine Mott, McDowell, Crawford Long, Sims and others. As to Beaumont, Gerhard and Holmes, the other outstanding American contributors in the first half of the 19th century, the first was at that time a lad of 18, and the other two had not yet been born.

On the other hand, this article by a young man still in his twenties appeared in pregnant times. Vaccination, "discovered" by Jenner five years before, had spread like wild fire through the civilized world, Bichat's three truly epoch-making works had appeared in the three previous years and John Hunter's immortal career had but recently terminated (1793); the science-loving Jefferson was President of the United States, and Napoleon was dominating Europe as First Consul. Who can say that such happenings were not without effect on the mind of the young physician and at any rate must we not recognize that his contribution was, to say the least, one of two or three of the most important that had hitherto been made to American medical literature?

Otto's life is not without interest. Born March 15, 1774 near Woodbury, N. J., the son, grandson and great grandson of physicians, he was early destined to follow the well worn family footsteps. His mother, Catherine, was the daughter of a Swiss immigrant, Jean Conrad Schweighauser, after whom he was named. His grandfather, who had emigrated from Germany in 1752, had attained eminence both in the extent of his practice and as an officer in the Revolutionary War, *inter alia* having charge without recompense of the Valley Forge Hospital in the trying winter of 1778. His father, Dr. Bodo Otto, also

MEDICAL REPOSITORY.

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ARTICLE I.

An Account of an HEMORRHAGIC DISPOSITION existing in certain Families. By JOHN C. OTTO, M. D. of Philadelphia.

ABOUT seventy or eighty years ago, a woman by the name of Smith, settled in the vicinity of Plymouth, New-Hampshire, and transmitted the following idiosyncrasy to her descendants. It is one, she observed, to which her family is unfortunately subject, and had been the source not only of great solicitude, but frequently the cause of death. If the least scratch is made on the skin of some of them, as mortal a hemorrhagy will eventually ensue as if the largest wound is inflicted. The divided parts, in some instances, have had the appearance of uniting, and have shown a kind disposition to heal; and, in others, cicatrization has almost been perfect, when, generally about a week from the injury, an hemorrhagy takes place from the whole surface of the wound, and continues several days, and is then succeeded by effusions of serous fluid; the strength and spirits of the person become rapidly prostrate; the countenance assumes a pale and ghastly appearance; the pulse loses its force, and is increased in frequency, and death, from mere debility, then soon closes the scene. Dr. Rogers attended a lad, who had a slight cut on his foot, whose pulse "was full and frequent" in the commencement of the complaint, and whose blood "seemed to be in a high state of effervescence." So assured are the members of this family of the terrible consequences of the least wound, that they will not suffer themselves to be bled on any consideration, having lost a relation by not being able to stop the discharge occasioned by this operation.

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OTTO'S ORIGINAL ARTICLE ON HEMOPHILIA IN THE MEDICAL REPOSITORY, 1803

served in the Revolution and at Valley Forge, as did two uncles, likewise physicians. Dr. Bodo died at the age of thirty of pneumonia, said to have been contracted while going to attend a Tory who had burned the doctor's house.

Young Otto was sent to the College of New Jersey (Princeton) and graduated with an A.B. in 1792 at the age of eighteen, not unusual for those times. He entered the office of the celebrated Benjamin Rush the next spring, and though he did not go through the yellow fever epidemic of that year with his master, returned in the autumn, became Rush's favorite pupil and remained his close friend until the latter's death in 1813, at which time Otto was elected to follow his master as Physician to the Pennsylvania Hospital. Otto graduated from the University of Pennsylvania in 1796, though he does not seem to be

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TRANSCRIPT OF OTTO'S ARTICLE IN THE MEDICAL AND PHYSICAL JOURNAL, 1808

listed in Dr. Rush's class book, the equivalent of present day matriculation. His graduation thesis on epilepsy is a carefully written study of fifty-five pages, systematically presenting predisposing, active and proximate causes, symptoms, complications and treatment—prophylactic, during, and between attacks. Though it is probably of no great importance in the history of the disease, it could not be much better done in most essential points today. Otto returned to the subject in later life, when, in 1828, he thought he had found a successful cure. Otto's connection with the University came shortly after the Revolutionary ruction between the old college and the New University had been healed by the union of the two institutions (1791). The medical Faculty consisted of Shippen, Professor of Anatomy, Surgery and Midwifery; with Caspar Wistar as Adjunct; Adam Kuhn, Professor of the Theory and Practice of Physic; Benjamin Rush, of the

Institutes of Medicine (*i.e.*, Physiology) and of Clinical Medicine; James Hutchinson of Chemistry; S. P. Griffith of Materia Medica and Botany; and Benjamin Smith Barton of Natural History and Botany. Almost all of these are well known names in American medical history, and as the University classes in the nineties were especially small, he probably enjoyed and profited by close personal contact, if he attended classes at all.

Settling as a practitioner in Philadelphia, he quickly had opportunity to renew his acquaintance with yellow fever, which appeared in epidemic proportions in 1797, 1798, 1799, 1802, 1803 and 1805. These disastrous epidemics had such a baneful influence on the trade of Philadelphia that they were considered by Weir Mitchell to have "forever ruined its mere commercial supremacy." In the second of these epidemics, 1798, Otto was himself attacked, "while on his way to see a sick friend near Woodbury, N. J. He remained during his illness at the house of a medical friend there and recovered with difficulty." Although smaller in number of cases than the more celebrated 1793 epidemic, the 1798 epidemic had the highest proportion of deaths of any, reaching the appalling proportion of 75 per cent or almost one-sixteenth of the total population of the city.

In the same year, 1798, Otto was elected a physician to the Philadelphia Dispensary, a position that he held for five years. This dispensary, founded in 1786, was the first of its kind in the country and in the 143 years of its useful existence has treated over two million patients.³ He was also for many years Physician both to the Orphan Asylum and the Magdalen Asylum.

Dr. Otto married Eliza Tod in 1802, and had nine children. His son, William Tod Otto, attained eminence in the judiciary and was a member of Lincoln's cabinet. There are numerous persons of this name living in Philadelphia today, but his only descendant in this city is Mr. Otto Tod Mallery, who has kindly put the family records at my disposal.

When Benjamin Rush died in 1813, Otto was chosen to succeed him as a Physician to the Pennsylvania Hospital, the twenty-fifth so selected since its foundation in 1752. Its records show that he donated

³ Ten years ago this venerable institution became the Out-Patient Department of the Pennsylvania Hospital.

\$40.00 in the same year. This was doubtless to qualify as a contributor, the group that still elects the Board of Managers of the Hospital.



OTTO'S TOMBSTONE AT WOODLANDS CEMETERY, PHILADELPHIA

The inscription is from the base of the shaft. His grave is in the foreground with markers.

His twenty-two years service at this institution was considered so valuable by the Board of Managers that on his resignation in 1835 a

special resolution acknowledges his "long, faithful and useful" labors. Indeed, it is probable, as is apparent from Parrish's Memoir, that Otto's own generation attached more importance to his bedside labors and lectures, given "at a time when the institution was visited by a large number of medical students from various portions of the country," than it did to his immortal description of hemophilia.

To meet the expected cholera epidemic in 1832 a committee of twelve leading physicians was appointed to take measures necessary to cope with the situation. Dr. Otto was unanimously selected chairman of the body. This was the western extension of the first great modern cholera epidemic, which, starting in India in 1817, reached England in 1831, and was observed in New York and Canada the next year. In Philadelphia alone during July and August 1832 there were 2240 cases with 750 deaths. After the epidemic the City of Philadelphia presented a handsome silver pitcher to Dr. Otto in recognition of his services. This is still in daily use in Mr. Mallery's household.

Elected a member of the College of Physicians in March 1819, he held various offices in that body, being Censor for many years and Vice-President for the last four years of his life. Some at least of his papers were read before that body, including an article on "Congenital Incontinence of Urine," which though done in 1830, fourteen years before his death, seems to be the last medical article that he wrote.

A man of the highest principles with a keen sense of duty, of a simple way of life yet with ease of manners, Otto was of the type that was content with the regard of his professional brethren and the patients that made up his rather small practice. "Those who knew him best, valued him most"—praise indeed, and sufficient for a retiring disposition that does not seem to have aspired to a wide practice or to the fame that he has posthumously acquired. He died on June 6, 1844 of "extensive organic disease of the heart" (oedema of the extremities, great difficulty of respiration, hydrothorax, etc.), though he had for years been a sufferer from frequent attacks of severe "general gout." He was interred in the newly opened Woodland Cemetery in West Philadelphia—the second person to be buried there, the first being Commodore David Porter.

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ECONOMIC ORGANIZATION OF THE MEDICAL SERVICES

DR. EDWARD C. STREETER

[An abstract of his remarks follows]

A study of the entire economic organization of the medical services as they exist today is now to be undertaken along genetic lines. It will be an attempt to trace the growth of medical technology and medical institutions in their relation to a rational and conscious promotion of the general health of mankind. What need has society for medical services and how adequately has the supply of those services met the demand? The past and present 'supply and demand' must be studied in all its economic bearings and in its relation to the progress of discovery and enrichment of the mind and spirit of man.

THE PHILOLOGICAL APPROACH TO THE HIPPOCRATEAN CORPUS

JOHN R. OLIVER, M.D.

The collection of medical books in Greek which traditionally bears the name of Hippocrates has been for centuries the bible of the medical profession. The history of the textual criticism of these books may be compared to the textual criticism of the Bible. There was for many centuries a feeling of absolute authority connected with the Hippocratic books, and most of them were accepted as the works of Hippocrates. Occasionally a commentator like Galen would question the authenticity of some one book. This approach of respect lasted down to the middle of the past century. The attitude is well represented by Baglivi who said "Nebulones qui Hippocratem non legunt." Next came what we may call the historical, literary approach, in which the contents of one book were compared with the contents of another and according to which many books were regarded as non-Hippocratic. An example of this type is *Censura Librorum Hippocrateorum*, by Gruener, 1772. Also Littreé's Edition of Hippocrates and especially F. Z. Emerens's, who in 1832 published his famous dissertation on the relation between the books Prognostic, Coan Prenotions and Epidemics One and Three. Then there was the approach on the basis of authenticity, which one may call the philological historical approach. The great philologist Wilamowitz includes two of the books of the Corpus in his *Kleines Griechische Lesebuch*. According to Wilamowitz no books of the Corpus are authentic. Hippocrates is a "name without writings." Prominent in this type of approach is Professor Max Wellmann. Compare his treatment of Aretaeus and Archigenes in his book on *Die Pneumatische Schule*. Interesting is his latest article in *Sudhoff's Archiv*, Volume 22, No. 3, pages 305 *et seq.*, in which he tries to connect the book of the Corpus on the Sacred Disease with Alkmaeon, whose few fragments are given by Diels in his *Fragments of the Presocratics*. This number of the *Archiv* contains three separate articles on the Corpus which shows how

great is the present interest of medical historians in Hippocratic questions. The purely philological approach remains to be worked out by scholars. Professor Heidel of the Wesleyan University did some purely philological work on the Corpus that was published in the Harvard Classical Studies about twenty years ago. His work, however, was scattered through a great many books of the Corpus and not concentrated on one. My own work has dealt with *Prorhetic One*, a book of Prognostic statements that has always been a puzzle and which has been considered one of the oldest documents in the Corpus. A rather laborious, purely philological study of the Greek text clears up many of the difficulties. *Prorhetic One* appears not to be a treatise but a fragment, preserved because written by some beloved teacher. The writer had evidently at his disposal several collections of prognostic statements or aphorisms. He intended to write a complete prognostic treatise. He took from one source a group of propositions on phrenitis and psychiatric material and from another a group on fevers. He welded these two groups together by putting in transition propositions from his own pen. From another source he took a group on spasms or convulsions. This also he welded on to the group on fevers with original transition propositions. He had another group on hemorrhages and one on parotitis. But here his work was interrupted. He did not have time to weld these last two groups into the unity of his work but probably some scholar or disciple found these two groups that were intended to be worked into the whole treatise and stuck them on to the end of it without introducing any transition propositions at all. All these facts and others more interesting become evident after a close study of the vocabulary, grammar and general construction of the Greek of *Prorhetic One*. Two mysteries still remain. If *Prorhetic One* be one of the oldest books in the Corpus, why is it not found in any Hippocratic manuscript of the first class and why is it found always in manuscripts of the M type and never in manuscripts of the V type? For a study of this kind time, patience and training are necessary. One looks forward to a period when such studies will be possible in this New Institute of the History of Medicine. Cicero says "*Quid dulcius literato otio.*" For literary pursuits and for philological study there must be "*otium*," that is, release from the daily, wearing cares of medical practice. Erasmus

says "*Musae primo mane colendae sunt.*" But if the early part of the morning must be spent in the hospital wards or in the operating room, there is little time for the Muses. Much of the medice-historical work done in America hitherto has been done as "*parerga*," that is, as something done in chance moments or in hours snatched with difficulty from the necessity of earning one's living. Of three medical historians this is certainly not true. For in spite of professional activities, men like Cushing and Garrison have "the love of learning, the sequestered nooks and all the sweet serenity of books," while of Dr. Welch it may be said "*Nihil tangit quod non adornat.*" He touches nothing that he does not adorn and beautify, but one cannot reasonably expect more than one Welch in every Century.

THE DESTRUCTION OF THE HUNTER MANUSCRIPTS. WAS IT AN ACT OF PIETY?

HENRY R. VIETS, M.D.

When John Hunter came to his tragic end, Wednesday, October 16th, 1793, he left behind him an "enormous quantity" of manuscripts, as well as the museum specimens, which were taken care of by his boy, William Clift, aged eighteen. Clift had been with Hunter only a year, making drawings, dissecting and taking his part in the charge of the museum; for the next seven years he lived in poverty in the dreary Castle Street house on seven shillings a week, keeping things together and transcribing some of the precious manuscripts. Parliament voted to purchase the collection in 1799, in 1806 it was removed from Castle Street to a temporary place of deposit and, in 1813, to the new home of the Royal College of Surgeons, Lincoln's Inn Fields, where it was properly arranged. Clift was elected F.R.S. in 1823; he continued as curator of the Museum for many years.

The manuscripts, in the meantime, had been taken by Clift in a cart to the house of Sir Everard Home, the acting executor of Hunter's will. For twenty-three years, from 1800 to 1823, the manuscripts remained in the possession of Home and during this period, "he (Home) conveyed from them what he wanted into the numerous papers that he read before the Royal Society, and into his 'Lectures on Comparative Anatomy'; then, in July, 1823, having made this use of Hunter's writings as material for his own advancement, he burned them" (Stephen Paget). When Clift was told of this destruction, he said to its author, 'Well, Sir Everard, there is but one thing more to be done, that is, to destroy the collection.' Clift's side of the story was set out, in 1834, before the Parliamentary Committee on Medical Education (*Lancet*, July 11, 1835). According to Clift, Sir Everard Home burned the notes and nearly set fire to his own house into the bargain, the same week "that Sir Everard had received back from the printer the last proof of his second volume of 'Lectures on Comparative Anatomy:' and I knew that he had used these papers very

largely in the preparation of that work." Home, of course, defended himself. He said that Hunter, when he was dying, told him to destroy the manuscripts, as they were in such a state that they were unfit for publication; yet Hunter had so prized them that three of the folios were put at his side when Reynolds painted him. Although he (Home) said he had destroyed every one of the manuscripts, when the trustees brought pressure to bear, he returned several (Paget). Home was sixty-seven at the time; he had been President of the Royal College of Surgeons, twice Hunterian Orator, Surgeon to the King, a Baronet, and was Mrs. Hunter's brother. How could a man of his standing commit such an infamous act of vandalism? Paget thinks "he got weary of the sight of the manuscripts, and persuaded himself that they might be burned, now that Hunter had been dead for thirty years. Unhappily for his good name, he had made use of them in his own writings." Sir Benjamin C. Brodie (Hunterian Oration, 1837) thought that, "as he (Home) grew old, he became, I believe, the subject of one of those forms of senile degeneration in morality against which all men growing old need to guard. He stole from the Hunterian manuscripts, and then burnt them, after publishing many of Hunter's observations as his own." Brodie continued to hold to this idea, which is expressed in his "Autobiography," written much later, but not published until three years after his death in 1862. He writes, "This act [the burning of the manuscripts] was equally unjustifiable and foolish. It was unjustifiable, because the manuscripts should have been considered as belonging to the Museum, which Parliament had purchased; and it was foolish, because it has led to the notion that he had made use of John Hunter's observations for his own purposes, much more than was really the case. I had frequent opportunities of seeing these papers during nine or ten years in which I was accustomed, more or less, conjointly with Clift, to assist him in his dissections. They consisted of rough notes on the anatomy of animals, which must have been useful to Hunter himself, and which would, I doubt not, have afforded help to Mr. Owen in completing the Catalogue of the Museum; but they were not such as could be used with much advantage by another person. In pursuing his own investigations Home sometimes referred to them, but I must say that while I was connected with him I never knew an instance in which he did not scrupulously

acknowledge whatever he took from them, and do justice to his illustrious predecessor. Unhappily, he was led afterwards to deviate from this right course, and in his later publications I recognize some things which he has given as the result of his own observation, though they were really taken from Hunter's notes and drawings." Home died in 1832, Clift in 1849 and there the matter has stood since Clift's testimony in 1834. No one has offered any other explanation for Home's extraordinary conduct; he stole the material and nearly, but not quite, succeeded in destroying the evidence. Fortunately, from 1793 to 1800 Clift had been making copies of some of the folios. These notes, edited by Sir Richard Owen, Clift's son-in-law, were published in 1861.

Over one hundred years after Sir Everard threw the precious folios into the fire, the best Hunterian scholar of our day, Sir Arthur Keith, Curator of the Hunterian Museum, comes forward with a new explanation of Home's act. He writes, at the end of a most delightful sketch on "The Bicentenary of John Hunter" (*Nature*, February 11, 1926): "There would have been no record left if Sir Everard Home had had his way. That any record was preserved at all of Hunter's real thoughts is due to William Clift. Home burned Hunter's original manuscripts, the usual explanation being that he had pilfered from them. A close study of the conventional character of Sir Everard Home and of the circumstances which surround this infamous act of vandalism have convinced me that the accepted explanation is not the true one. Home shared implicitly in the religious beliefs of his time and never doubted that by destroying all evidence of Hunter's heretical convictions he was performing an act of piety on behalf of the world in general and for the memory of his brother-in-law in particular." Sir Arthur Keith expresses the opinion, also, that "Hunter's inquiries had made him a pagan. He silently and resolutely thought and wrote as if the book of Genesis had never been in existence." Even Sir Richard Owen, Clift's son-in-law, felt that he ought to apologize for Hunter's heretical beliefs, and in the 'Advertisement' to Clift's notes (1861), he says: "Some may wish that the world had never known that Hunter thought so differently on some subjects from what they believed, and would have desired, him to think. But he has chosen to leave a record of his thoughts, and, under the circumstances in which

that record has come into my hands, I have felt myself bound to add it to the common intellectual property of mankind."

In 1793, the last year of Hunter's life, he communicated a paper to the Royal Society, "On the Fossil Bones presented to that Society, etc." It was published in the "Philosophical Transactions" (1794) and it contains, as Owen points out (*Essays and Observations*, etc., 1861, vol. 1, p. 292) "frequent, and, for that date, bold allusions to the 'thousands of years' required for particular operations, or the lapse of time appreciated both as regards geological phenomena and the fossilization of animal remains." The same year, moreover, Hunter wrote again "On Extraneous Fossils and their Relations," one of the first of Clift's evening labors after joining Hunter's household; the 'thousands of years' became 'many thousand *centuries*.' This was too much for some of the Fellows of the Royal Society. Hunter was told that "persons very numerous, and very respectable in every point but their pardonable superstitions, will dislike any mention of a specific period that ascends beyond 6000 years," and he was asked to replace 'centuries' by 'years.' He would not modify his statements and withdrew his paper.

Hunter made other allusions which would classify him, in the late 18th century, as a heretic. He appreciated the inadequacy of the deluge to account for the marine strata and fossils now forming dry land and wrote, "Forty days' water overflowing the dry land could not have brought such quantities of sea-productions on its surface; nor can we suppose thence, taking all possible circumstances into consideration, that it remained long on the whole surface of the earth; therefore there was no time for their being fossilized; they could only have been left, and exposed on the surface." Strangely enough this "heretical" paper was not burned by Home and was transmitted by Home's son to the Royal College of Surgeons; it was published in 1859. Home, with his "conventional character," would not permit the acceptance of the ideas expressed by Hunter, so he tried to destroy all the evidence. It is remarkable, however, that the very paper containing the most pronounced and pagan formulations was not destroyed. Should we change all our previous ideas about Home's guilt? Was the burning of Hunter's manuscripts by Home "an act of piety?" These questions seem far from completely answered.

CURRENTS OF ANATOMICAL INSTRUCTION IN THE MIDDLE AGES BEFORE VESALIUS

PROFESSOR KARL SUDHOFF

Before Vesalius one cannot speak of anatomical research. Translations from the ancients were appropriated and included. The current anatomy was essentially that of Galen or at least in the tradition of Galen.

The anatomy taught in the most important medieval center of medical instruction was a mixture, partly that of Rufus Vindicianus and partly that of Galen, especially in the form of instruction. In opposition to the former memorizing of anatomical texts the University of Salerno introduced new forms and methods into the teaching of anatomy, but these, too, were colored by Galen's ideas: Demonstration on animals' cadavers. It was still known that Galen had recommended the pig as an instructive example for the demonstration and examination of the internal organs (for the demonstration of visceral topography which was primarily emphasized), and the monkey and the bear (*Ursus altans*) for the external organs, especially neck, back and limbs and so to the musculature, skeleton and nervous system. The opening and examination of the skull came last. All three Salernitan anatomical texts, thus far known, follow the old "Anatomia Porci Cofonis" in their method of dissecting the pig from the oesophagus down. (This "Anatomia Porci Cofonis" may be attributed to Mathaeus Platearius.) In their course of instruction these texts follow the brief outline of anatomy of Maurus and Henschel's explicit "Demonstratio anatomica," which, according to its references, must in all probability also be a work of Maurus (*cf.* the Maurus manuscript of Paris).

From the literature extant on the subject, we may conclude that, after the emphasis placed on demonstrations in Salernitan anatomical teaching, this method of instruction fell temporarily into disuse, although other modes of teaching medicine current in Salerno were avidly imitated. Especially in Paris, under the influence of Aegidius Corboliensis, the teaching program of Salerno was followed; in

particular the Constantinian "*Ars medicinae*" formed a part of the elementary instruction of young physicians. But although the literary level of anatomical instruction rose considerably, the method of demonstration was again abandoned completely. This holds true also for the work of "Richard the Englishman" in Paris at the beginning of the 13th century; also for the so-called "*Anatomia viva Galeni*," which Topley considers a literary product of Bologna, while George W. Corner ascribes it more plausibly to Eastern France or Western Germany.

After 1300 one finds in Bologna a revival of the demonstration method in anatomical pedagogy. Its origin, however, just as that of the Salernitan method, is still obscure. The presentation of Mondino was of decisive importance. He either wrote or dictated his text, but carried out his demonstrations on human instead of on animal cadavers. His little book, based directly on the dissection of the human cadaver, speedily became the authoritative model for the teaching of anatomy in the late middle ages, and the guide for visceral topographic demonstration. This movement, with the growing knowledge of Mondino's book, made its triumphant procession through all the universities of the Middle Ages and of the Renaissance. Whatever was taught and written before Vesalius, was actually only a commentary on this book, and for the most part laid claim to nothing more. Berengart of Carpi must also be included in the throng of imitators, and even the early work of Vesalius in his first great anatomical demonstration of Padua, recorded in his "*Tabulae Sex*," followed the path of Mondino.

In connection with the remark by Corner, Sudhoff discussed the Latin Maurus manuscript of Paris (Ms. lat. 18499. n. v. acq. lat. 79) a little more fully. It probably contains this great Salernitan's complete material in so far as he concerns himself with the Constantinian "*Ars medicinae*." It is interesting, not only with respect to the text but also in regard to the pictures which may be designated as illustrations to the six Maurus lectures. It is of importance both professionally and culturally. Sudhoff has published only a small portion up to now and has left the whole to his colleague Castiglioni in Padua for future publication.

DISCUSSION OF GEHEIMRAT SUDHOFF'S PAPER BY
DR. CORNER

I am sure that the audience will sympathize with my embarrassment at having to speak after this delightful but disconcerting introduction. (Geheimrat Sudhoff and Professor Corner had been corresponding for some time but had not previously met in person; Dr. Corner's rising to discuss the paper was the signal for a very friendly and amusing greeting from the speaker.)

One cannot offer a critical discussion of instruction of the kind we have just received from Geheimrat Sudhoff, but it is permissible to ask a question or two in the hope of receiving more instruction.

I am deeply interested in the questions which have been reviewed. In a work which I published a few years ago on the same topic I dealt with one of these questions, viz., the authorship of the Second Salernitan Demonstration. This work is written in a distinctly polemical and independent tone, and this fact led Professor Sudhoff to suggest that it was written by that Magister Maurus from whose pen we have another smaller anatomical treatise so highly regarded that a loyal pupil endorsed one of the copies with the words: "This work was left us by Maurus, more precious than gold."

The Second Salernitan Demonstration contains a few clues by which its author might perhaps be identified. In particular, he states that in another of his works, a commentary on the Aphorisms of Hippocrates, he has given a description of the veins of the head, when expounding the aphorism "*Posteriora capitis dolentia*."

There is a known commentary on the Aphorisms, attributed to Maurus in the *Collectio Salernitana*, which is couched in an argumentative style similar to that of the Second Demonstration, but unfortunately a large fragment of the text is missing, including the fifth book, so that it was not possible to test Professor Sudhoff's suggestion by this means, when it was first propounded.

However, a complete manuscript of the same commentary exists in the *Bibliothèque Nationale* of Paris, in which the gloss on the aphor-

ism in question does not contain the sort of description of the veins of the head which we are to expect in the commentary actually written by the author of the Second Demonstration. I concluded from this that the connection between Magister Maurus and the Second Salernitan Demonstration remains uncertain.

I have mentioned all this because I hope the speaker will be able to give us further evidence on this point. It is very important to learn all we can about the connection between the great names of Salernitan medicine and the written works of that school which have come down to us.

We are particularly fortunate in hearing from Professor Sudhoff himself the results of his recent study of Ricardus Anglicus, which has disclosed so much more than we knew previously about the work of this great Englishman and cosmopolitan scholar.

APPENDIX

The following description of the symbols of the decorative forms used on the ceiling of the Great Hall of the Welch Medical Library was supplied by Mr. Salvatore Lascari, the artist in charge of the work:

DESCRIPTION OF SYMBOLS OF THE FORMS USED FOR DECORATION IN THE WELCH MEDICAL LIBRARY

In the large panels with red field are depicted the Aesculapian serpent and staff with wings of thought and aspiration, and with varied forms of the honeysuckle which is symbolic of wisdom.

In the large panels with blue field are the lamp of inspiration and learning, and a varied form of the sunflower which is symbolic of light and unfoldment of ideas which illuminates life for man.

In the two rectangular panels above the fireplace, on a blue field, are depicted the pomegranate, symbolizing many members, and the honeysuckle, symbolizing wisdom.

In the five octangular panels on the red field from which the chandeliers hang, is a zigzag form representing electricity; and in the six octangular panels on the blue field is a seven-pointed form symbolizing water.

The Johns Hopkins Hospital shield shows the form of a cross within a circle; the ends of the cross are treated in the form of a trefoil, symbolic of botany.

The panels containing the Sphinx, with tail of honeysuckle and shield with monogram of The Johns Hopkins University, symbolize The Johns Hopkins University, wisdom, and mystery of life. The laurel symbolizes achievement.

All of the shields are against floating cloud forms, which signify that the activities of The Johns Hopkins University, The Johns Hopkins Hospital, the City of Baltimore and the State of Maryland are felt in every country under the heavens.

The ceiling under the main Staircase: In the long narrow panels above the steps leading to the upper floor, the panel on the blue field contains the hour glass and owl, symbolizing time and wisdom. The panel on the red field contains the serpent with tail in its mouth, symbolizing eternity. In the square panels are plant forms representative of botany; the rose is symbolic of Life and Beauty, because it blossoms among thorns (tribulations). The twelve signs of the Zodiac represent the months of the year.



